

Rehabilitating Roe 8: Detailed Vertebrate Fauna Survey 2025/26



Prepared for the City of Cockburn by

FAUNATRACK 

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Cover Photo: Forest red-tailed black cockatoo (*Calyptorhynchus banksii naso*) © Ray Lloyd / FaunaTrack

Executive Summary

FaunaTrack was engaged by the City of Cockburn to undertake a Detailed Fauna and Fauna Assemblages Survey of The Roe 8 corridor, a 72ha parcel of land currently under the City's management, extending for approximately 4.5km from Bibra Dr in Bibra Lake, west to Southwell Cres in Hamilton Hill.

Survey objectives

- Undertake a desktop study
- Determine the native terrestrial vertebrate fauna within the project area (cleared areas and surrounding buffer)
- Determine the introduced vertebrate fauna and their spatial extent
- Determine the occurrence/potential occurrence of fauna of conservation significance at the site
- Confirm suitable breeding and foraging habitat for black cockatoo species within the project area, and identify current habitat trees
- Assess suitable habitat for Quenda (*Isoodon fusciventer*) and undertake searches for diggings of this species
- Conduct opportunistic surveys for conservation significant avifauna
- The determination of a set of metrics by which to base assessment of restoration objectives so as to be applied to future monitoring and assessment.

Surveys were undertaken from late August 2025 through to April 2026 and consisted of the following methods:

- Fauna trapping survey (pitfall trapping only)
- Systematic bird census
- Quenda foraging transects
- Motion sensor camera deployment
- Bat detection with the use of ultrasonic detectors
- Frog census
- Nocturnal spotlighting
- Targeted searches for vertebrate fauna, particularly those of conservation significance, including a visual assessment of black cockatoo habitat (breeding, foraging and roosting potential)
- Tree hollow inspections for signs of black cockatoo nesting or nesting potential
- Some additional vegetation assessments, and
- Opportunistic observations

Results

Fourteen systematic survey sites (seven paired reference and rehabilitated sites) were established within the corridor alignment which included pitfall trapping and bird census. Additionally 39 motion cameras and 14 bat detectors were deployed, as well as several quenda foraging transects, spotlighting transects, frog surveys and targeted searches. The survey period from August-November 2025 and February-April 2026, incorporated 1890 pitfall trapping nights, 273 motion camera nights, 14 bat detector nights, 32 person hours of systematic bird surveys, 18 person hours of nocturnal spotlighting, 16 person hours of Quenda foraging transects, four person hours of frog surveys, and 28 person hours of targeted searches. This resulted in 4334 individual fauna detections of 97 vertebrate fauna species.

Vertebrate fauna assemblage

The survey area has the potential to support up to 205 vertebrate species, including nine species of frog, 44 species of reptile, 22 species of mammal (16 native and six introduced) and 132 species of bird. Current surveys recorded seven species of frog, 20 species of reptile, 13 species of mammal and 57 species of bird.

Of these, the following six species of conservation significance were detected:

- The EPBC listed Endangered Carnaby's cockatoo (*Zanda latirostris*)
- The EPBC listed Vulnerable Forest red-tailed black cockatoo (*Calyptorhynchus banksia naso*)
- The EPBC Marine/migratory Rainbow Bee-eater (*Merops ornatus*)
- The Specially protected South-west carpet python (*Morelia spilota imbricata*)
- The Priority 4 Quenda (*Isodon fusciventer*), and
- The Priority 3 Perth-lined Slider (*Lerista lineata*)

Additionally, a single frog, five reptiles, one mammal and 13 bush bird species of local conservation significance were also recorded:

- Quacking frog (*Crinia georgiana*)
- Southwest cool skink (*Acritoscincus trilineatus*), and Southwestern crevice-skink (*Egernia napoleonis*)
- Common brushtail possum (*Trichosurus vulpecula hypoleucus*)
- Common bronzewing, Square-tailed kite, Collared sparrowhawk, White-browed scrub-wren, New-holland honeyeater, White-cheeked honeyeater, Brown goshawk, Splendid fairy-wren, Weebill, Nankeen night-heron, Whistling kite, Grey shrike-thrush and Western wattlebird.

The vertebrate fauna assemblage observed was generally similar to previous fauna surveys undertaken within or surrounding the project area, with the number of frog, reptile and mammal species recorded achieving the minimum objective of Goal 10 in the RMP (frequency of records of native fauna species $\geq$ 50% of that recorded in the baseline survey and/or reference sites), and close to the primary objective in the RMP (frequency of records of native fauna species $\geq$ 100% of that recorded in the baseline survey and/or reference sites). While the number of birds species recorded also achieved the minimum objective of Goal 10 in the RMP (frequency of records of native fauna species $\geq$ 50% of that recorded in the baseline survey and/or reference sites).

Pitfall trapping and bird census results

There was no significant effect of disturbance of ground dwelling fauna, however several species exhibited a slightly higher preference for (or were observed in greater abundances) in the rehabilitated areas, including *Ctenotus australis*, *Ctenotus fallens*, *Limnodynastes dorsalis*, *Morethia obscura* and *Pogona minor*. In addition, *Acritoscincus trilineatus*, *Litoria adalaidensis*, *Morethia lineocellata* and *Pseudonaja affinis* were only recorded in rehabilitation/disturbed sites. Species that showed a slightly higher preference for (or were observed in greater abundances) in the reference areas included *Christinus marmoratus*, *Heleioporus eyrei*, *Lerista lineata*, and *Menetia greyii*. In addition, *Anilius australis*, *Christinus marmoratus* and *Strophurus spinigerus* were only recorded in reference/undisturbed sites.

There was a significant effect of disturbance on the avifauna community. Species that showed a strong preference for (or were observed in greater abundances) in the rehabilitated areas included Brown honeyeater, Silvereye, Splendid fairy-wren, White-browed scrub-wren, and White-cheeked honeyeater. Species that showed a strong preference for (or were observed in greater abundances) in the reference areas included Australian raven, Forest red-tailed black cockatoo, Galah, Little corella, Rainbow lorikeet, Red-capped parrot, Red wattlebird, Rufous whistler, Striated pardalote, Weebill, and Western gerygone. In addition, the Brown goshawk, Collared sparrowhawk, Grey shrike-thrush, both Spotted and Striated pardalote, and Varied sitella were only recorded in reference/undisturbed sites.

Quenda abundances and distribution

Quenda were detected in all management zones except Karak, with observed abundances being much higher in reference sites than rehabilitated sites, and with greater numbers of foraging observations and motion camera detections in reference sites than rehabilitated sites. Overall Quenda observations were also considerably higher than those detected in 2019/2020 surveys, suggesting an increase in overall Quenda abundance.

Introduced species

Thirteen introduced species were recorded during the surveys, including one insect (feral honeybee), six mammals (including the domestic dog) and six birds. Bees were recorded throughout the survey area, with hives observed in 19 (one third) of the tree hollows inspected, with higher numbers in Tuart, Moodjar and Bibool. Several additional hives were also detected during targeted and opportunistic surveys. Rainbow lorikeets also occupied 12 (one quarter) of the tree hollows inspected and were in greater abundances in reference areas. Cats were commonly detected on motion cameras, particularly in the Karak management zone, but also in Quenda, Tuart, Biyara and Djara, with higher abundances in rehabilitation areas. While foxes were most frequently detected in Moodjar, but also in Bibool, Quenda and Djara, and appeared to be more abundant in reference areas. While rabbits were most recorded in the rehabilitated areas of Biyara, Djara, Moodjar and Bibool.

Black cockatoo habitat

No potential black cockatoo breeding trees occur within the rehabilitated areas. A further 83 potential nesting trees (DBH > 50cm and/or containing hollows) were recorded in the study area from the Tuart management zone, which were not assessed in surveys by BCE (2020). Seven of these contained hollows of potential breeding suitability for black cockatoos. These seven trees, as well as an additional 51 potentially suitable habitat trees flagged by BCE (2020) were inspected for hollow suitability/use with a pole camera. No evidence of breeding was observed, however observations of hollow prospecting by Forest red-tailed black cockatoos (RTBC) were observed on two occasions. Foraging evidence of both RTBC and Carnaby's cockatoo were observed throughout the study area. Carnaby's cockatoos were mainly observed foraging in the Tuart, Biyara, Quenda and Moodjar management zones, with foraging evidence and feeding observations predominantly occurring in the reference areas of Tuart and Biyara. While evidence of Carnaby's feeding in rehabilitation areas was also observed in the Tuart management zones (*Banksia sessilis*), Quenda, Djara and Moodjar management zones, where foraging evidence was observed of *Banksia attenuata* and *Banksia menziesii*. Forest red-tailed cockatoos were frequently observed foraging and/or live feeding sightings throughout the corridor, with extensive foraging signs observed throughout all management zones. Foraging evidence was predominantly observed in the Karak and Djara management zones, with high levels of foraging activity in both the reference and rehabilitation areas. The relatively high percentage cover of young Marri (*Corymbia calophylla*) in these areas, particularly in the rehabilitation areas has provided ample foraging resources. Additionally, several roosting sites for black cockatoos occur within proximity of the study area, with a potential (temporary), previously unknown RTBC roosting site identified directly adjacent to the study area during the current survey.

Summary

- The minimum requirement of Goal 10 in the RMP has been achieved in all fauna groups. With all groups except birds edging closer to the primary goal
- Significant species such as Quenda and black cockatoos are becoming more abundant across the study area, including the use of rehabilitated areas by black cockatoos
- Disturbance (reference vs rehabilitation) was not a significant driver of the ground-dwelling fauna community, with ground-dwelling fauna not significantly affected by disturbance, but there was a significant effect of habitat and season
- Disturbance was a significant driver of the avifauna community, with disturbance, habitat and season having a significant effect on the bird community observed
- Early colonisers of rehabilitated areas include species such as Splendid fairy-wrens, White-browed scrub-wrens, Silvereyes, Brown honeyeaters, *Ctenotus australis*, *Ctenotus fallens*, *Pogona minor* and *Limnodynastes dorsalis*.
- Species not yet recolonising or taking longer to colonise rehabilitated areas include species such as Grey shrike-thrush, Western gerygone, Striated pardalote, Red wattlebird, Red-capped parrot, Galah and Little corella
- Reference areas contain a higher percentage cover of large, mature trees, as well as greater percentage cover and depth of leaf litter
- Rehabilitated areas contain a denser upper shrub layer and greater areas of bare ground.

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1. Introduction

1.1 Project background

FaunaTrack was engaged by the City of Cockburn to undertake a detailed fauna survey of the Roe 8 Corridor. The Roe 8 corridor (Bibra Dr to Southwell Cres) has been subject to partial clearing of native vegetation along its alignment. The current state government approach to this portion of the Roe 8 road reserve is to rehabilitate it in response to community desire. The Rehabilitating Roe 8 project has commenced and is guided by the Rehabilitating Roe 8 Rehabilitation Management Plan (RMP) (Emerge 2018). The project is in its eighth year and is due to end in June 2028. The City of Cockburn has entered into an agreement with Main Roads WA to manage this portion of the road reserve and implement the RMP, with the results of this survey helping to inform restoration objectives detailed in the RMP.

The Roe 8 road reservation that is under the City's management order extends for approximately 4.5km from Bibra Dr in Bibra lake west to Southwell Cres in Hamilton Hill and covers approximately 72ha (see Map 1). Each section of the corridor has been broken up into management zones (Map 1) and the vegetation communities within it recorded.

Approximately 18 hectares of the alignment has previously been cleared and is currently subject to rehabilitation programs. This area, along with a 20m buffer surrounding the cleared areas were the subject of the current survey. However, some areas remain that were not impacted on by clearing which may hold habitat value for fauna, and although these areas are not within the specific scope of the current study, these areas of remnant vegetation are providing potential high value or important habitat, such as fauna corridors, to support fauna populations around the impacted areas and contribute to recolonization of those areas.



1.2 Site location and overview

The project area is located within the City of Cockburn, approximately 15km south of the Perth CBD and is situated within the Swan Coastal Plain 2 subregion (SWA2) of Swan Coastal Plain (SCP) Bioregion, which experiences a Mediterranean climate and rainfall range of 600-1000mm (Mitchell et. al. 2002).

The SCP is bordered in the east by the Darling Scarp and the west by the Indian Ocean and is characterised by a series of parallel dune systems from west to east, known as the Quindalup, Spearwood, and Bassendean dune systems, with the Pinjarra Plain separating the dunes from the scarp. The region (1,333,901ha in total) comprises of predominantly Tuart woodlands and/or heath on limestone, Jarrah and/or *Banksia* woodlands on dunes, Marri on colluvial and alluvial sands, as well as a series of seasonal wetlands and offshore islands (Mitchell et. al. 2002). The dominant land uses in the region consist of agriculture, horticulture and plantations, conservation and crown land reserves (including unallocated), urban and rural-residential, road infrastructure and easements, pasture improvement/grazing, as well as small areas of mining and defence (Mitchell et. al. 2002).

The project area lies predominantly within the Spearwood Dune System, with the far eastern extent encompassing the Bassendean Dune System. The Spearwood dunes are comprised of sand dunes and plains with deep yellow and pale sands and shallower yellow to brown sands supporting woodland, open forest and closed heath. The vegetation (Cottesloe Complex – Central and South) consists of a mosaic of woodland Tuart (*Eucalyptus gomphocephala*) woodland and open forest with Jarrah (*Eucalyptus marginata*) and Marri (*Corymbia calophylla*) and closed heath on the limestone outcrops. The Bassendean dunes area composed of undulating dunes with white-grey sands supporting woodland to low woodland and sedgeland. The vegetation at the site (Bassendean Complex – Central South) consists of woodland of Jarrah (*Eucalyptus marginata*), Sheoak (*Allocasuarina fraseriana*) and *Banksia* species (*attenuata* and *menziesii*).

Habitats within the project area consist predominantly of vegetated uplands supporting woodlands, mixed low shrublands and vegetated wetlands/swamplands supporting open forests and woodlands. Although being subject to intensive clearing and since undergoing extensive rehabilitation, the project area now consists of many tracks and pathways, including management/vehicle access tracks, narrower walking tracks and pathways, and small areas of manicured parkland/garden landscapes and public facilities, including picnic tables and interpretive signage.

1.3 Scope of Works

The RMP (Emerge 2018) details a specific restoration goal for fauna (Goal 10). The survey aims to provide information on how restoration is progressing by providing a baseline of fauna observations and records for the cleared areas for each management zone and its associated buffer, so that over time fauna habitat values can be compared with pre-clearing survey data (reference data) at the conclusion of the 10 year rehabilitation period.

Specific aims of Goal 10 are to re-establish fauna habitat in cleared areas with the following objectives:

- **Primary objective:** Frequency of records of native fauna species $\geq$ 100% of that recorded in the baseline survey and/or reference sites.
- **Minimum objective:** Frequency of records of native fauna species $\geq$ 50% of that recorded in the baseline survey and/or reference sites.

Scope Part A-Establishing reference metrics

The baseline fauna survey records will be critical in understanding how fauna are re-colonising the site, to what extent and which species are restoration pioneers and those other species which require more advanced vegetation for habitat. Critically will be the determination of a set of metrics by which to base assessment of restoration objectives. These metrics and their required monitoring methodology are to be detailed so as to be applied to future monitoring and assessment.

Scope Part B-Field based survey

The scope of work and objectives of the survey component were to:

- Undertake a desktop study comprising database searches and literature review of previous vertebrate fauna surveys within and surrounding the project area and establishing what should be considered as references for comparison to assess restoration outcomes
- Determine the native terrestrial vertebrate fauna (birds, mammals, reptiles and amphibians) within the project area including cleared areas and surrounding buffer areas
- Determine the introduced vertebrate fauna, their spatial extent and their current impact on local native ecosystems
- Determine the occurrence or potential occurrence of fauna of conservation significance at the site, including an assessment of the suitability of the project area in providing habitat for these species, the extent of this habitat and the quality/sustainability of this habitat within both the cleared areas and surrounding buffers
- Confirm suitable breeding and foraging habitat for black cockatoo species within the project area, specifically Carnaby's cockatoo (*Zanda latirostris*) and the Forest red-tailed black cockatoo (*Calyptorhynchus banksii naso*) and identify current habitat trees
- Assess suitable habitat for Quenda (*Isoodon fusciventer*) and undertake searches for diggings of this species within the project area, and
- Conduct opportunistic surveys for conservation significant avifauna including the Peregrine falcon (particularly along powerlines), Eastern osprey and Rainbow bee-eater.

2. Methods

2.1 Database searches

Searches for fauna incorporated a 10-kilometre radius and/or (10km buffer of the project area) centred on the following co-ordinates:

-32.085465° / 115.818930°

The following sources were consulted in the formulation of potential fauna lists:

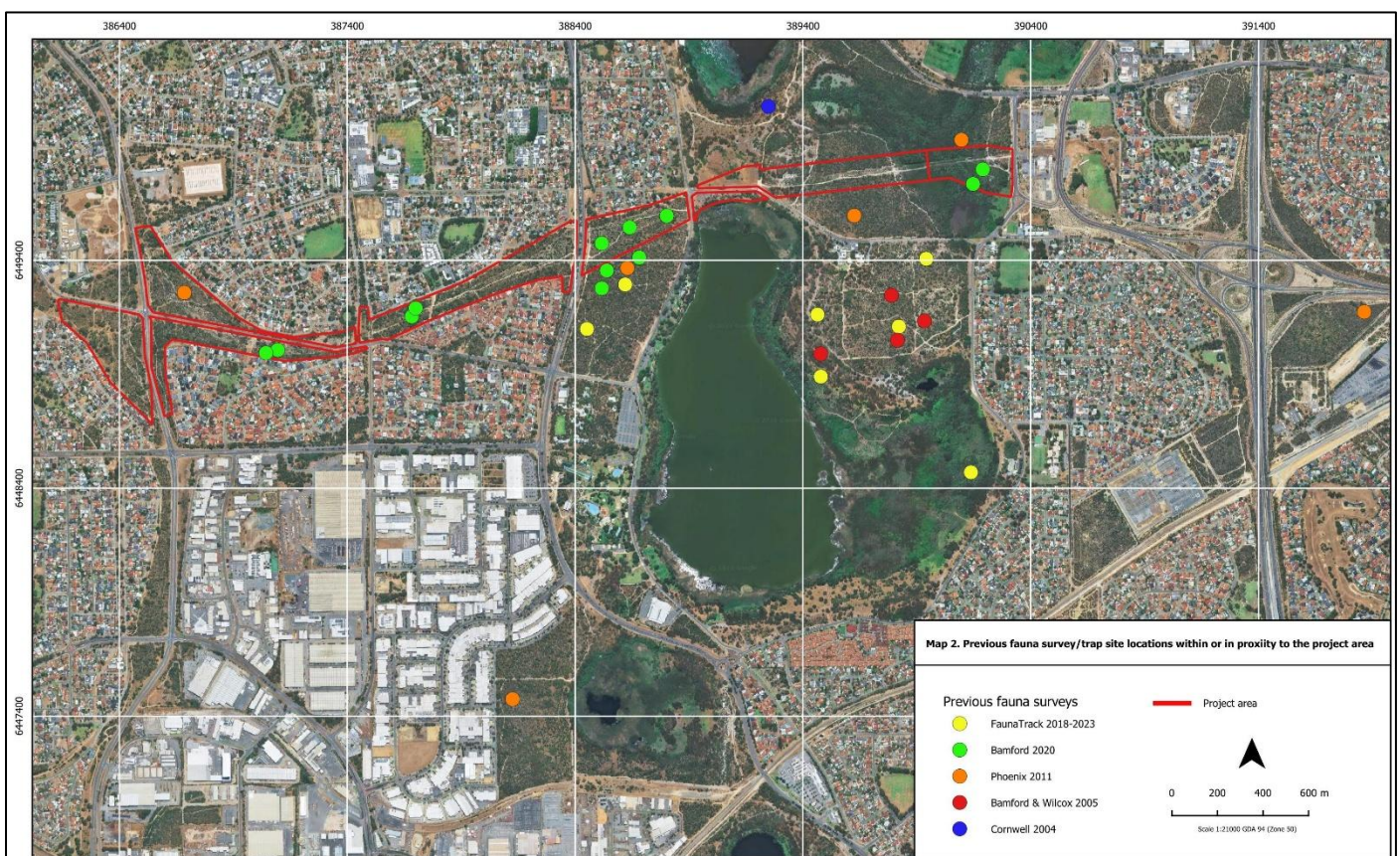
- Atlas of Living Australia (ALA, 2025). Accessed 19th August 2025
- Department of Biodiversity, Conservation and Attractions (DBCA) and Western Australian Museum NatureMap Species Database (DBCA, 2025a). Requested 4th August 2025
- DBCA Threatened and Priority Fauna Database (DBCA, 2025b). Requested 4th August 2025
- EPBC Act Protected Matters Search Tool (DAWE, 2025). Accessed 19th August 2025.
- BirdLife Australia's BirdData Database (BirdLife Australia, 2025a). Accessed 29th October 2025.

- DBCA's Dandjoo Biodiversity Data Repository (DBCA, 2025c), and
- Results of previous fauna surveys conducted in the reserve(s) and/or local area.

Previous, relevant fauna surveys undertaken within the immediate survey area include:

- FaunaTrack (2022) Detailed Fauna Survey of Bibra Lake and Yaakan park. Unpublished report to the City of Cockburn.
- Bamford Consulting Ecologists (BCE) (2020) Terrestrial Vertebrate Fauna Survey: Rehabilitating Roe8. Unpublished report to the City of Cockburn
- FaunaTrack (2018) Amphibians, reptiles, and mammals of Bibra Lake (incl. Lot 800 Gwilliam Road). Unpublished report to the City of Cockburn
- Phoenix Environmental Sciences (2011) Vertebrate Fauna Survey for the Roe Highway Extension Project. Unpublished report to South Metro Connect
- Bamford and Wilcox (2005) The amphibians, reptiles and mammals of three reserves in the City of Cockburn: Bibra Lake, Yangebup Lake and Little Rush Lake.
- Cornwell (2004) Western Australia's Herpetofauna. North Lake Banksia Woodland. A species richness study in Beeliar Regional Park.
- BirdLife Australia (2025b) Numerous bird surveys undertaken throughout the area from 1999 to 2025.

In addition, FaunaTrack has undertaken numerous Basic, Detailed and Targeted fauna surveys throughout the broader area since 2016 and has a considerable database of local species records from within the City of Cockburn LGA.



Forming part of the Desktop Assessment, these searches help to identify several species that may potentially occur or have previously been recorded within the study area. Species were then assigned to a likelihood presence category based on habitats present and distributional range. Categories were defined as follows:

- **Known:** Records previously confirmed within the study area.
- **Likely:** Both suitable habitat present and local records exist within a radius of 10 km.
- **Possible:** Either suitable habitat present or local records exist within a radius of 10 km.
- **Unlikely:** Area contains no suitable habitat or local records, and/ or locally extinct.

These searches often comprise a large percentage of wetland, migratory or marine bird species that either infrequently visit the local and/or the broader area, or are inhabitants of offshore coastal islands, near coastal or inland wetlands. Due to the lack of large, open waterbodies within the immediate survey area, many of these are of low likelihood to use the survey area on a regular basis, or even at all. There are several, moderate to large, semi-permanent waterbodies immediately adjacent to the study area (Bibra Lake, Horse Lake and North Lake), as well as part of an ephemeral, wooded wetland (Roe Swamp) in the far eastern part of the study area, some of these species have previously been identified in the project area (Birdlife, 2025a; DBCA, 2025b; Phoenix, 2011). Most species however are strictly associated with waterbodies such as Bibra Lake or North Lake with many species unlikely to occur in or regularly frequent the study area besides a potential flyover and have been excluded from putative species tables.

In addition, all pelagic bird species (i.e. albatross and petrels), marine mammals (i.e. whales and seals), fish (i.e. sharks) and marine reptiles (i.e. sea turtles and sea snakes) have also been excluded from searches as these are most certainly unlikely to occur within the study area.

2.2 Survey timing

Surveys were conducted over two seasons, August to November 2025 (Spring-survey) and February to April 2026 (Autumn-survey), whereby a range of fauna survey methods and techniques were employed (See Section 2.5).

2.3 Personnel

Field surveys were undertaken by Mr Ray Lloyd and Mr Jeff Turpin. Bat call analysis and identification was undertaken by Mr Bob Bullen (Bat Call WA). Statistical analysis of vertebrate trapping results and bird census data was undertaken by Dr Wes Bancroft. This report was prepared by Ray Lloyd. Field work was carried out under the permit BA27001365 issued by the Department of Biodiversity, Conservation and Attractions, Scientific User Licence U316 (2023-2025) and U316 (2026-2028) issued by the Department of Primary Industries and Regional Development (DPIRD) and Animals Ethics Approval Number WAEC 23-09-56 issued by the DPIRD Wildlife Animal Ethics Committee.

2.4 Site selection

Five vegetation communities exist across the project area:

- Central Banksia *attenuata* – *Banksia menziesii* woodlands (FCT 23a)
- Central Banksia *attenuata* – *Eucalyptus marginata* woodlands (FCT 21a)
- Spearwood Banksia *attenuata* or *Banksia attenuata* – Eucalyptus woodlands (FCT 28)
- Wet forests and woodlands (FCT 11), and
- *Melaleuca preissiana* damplands (FCT 4).

The project area has also been broken down into seven target ecosystems:

- Wetland/wet forest and woodland
- Banksia woodland
- Banksia/jarrah woodland
- Holly-leaved banksia woodland
- Banksia/coastal blackbutt woodland
- Banksia/woody pear woodland
- Banksia/tuart woodland.

The Roe 8 corridor has further been broken up into eight main management zones, representing target ecosystems/key habitat types occurring throughout its length (see Map 1). Starting from the western extent at Southwell Crescent and continuing east to Bibra Drive, these include the following management zones:

- Tuart (formerly referred to as Stock Road West)
- Biyara (formerly referred to as Forrest Road North)
- Quenda (formerly referred to as Forrest Road South)
- Karak (formerly referred to as North Lake Road West)
- Djara (formerly referred to as North Lake Road East)
- Yaakan (formerly referred to as Turtle Corner)
- Moodjar (formerly referred to as Hope Road North), and
- Bibool (formerly referred to as Bibra Drive)

Fourteen (seven paired) systematic survey sites were established within the project area (13 during 2025 and a further site in 2026), with sites located in all management zones except Yaakan (a small area with predominantly rehabilitated /landscaped habitats).

Sites were selected based on:

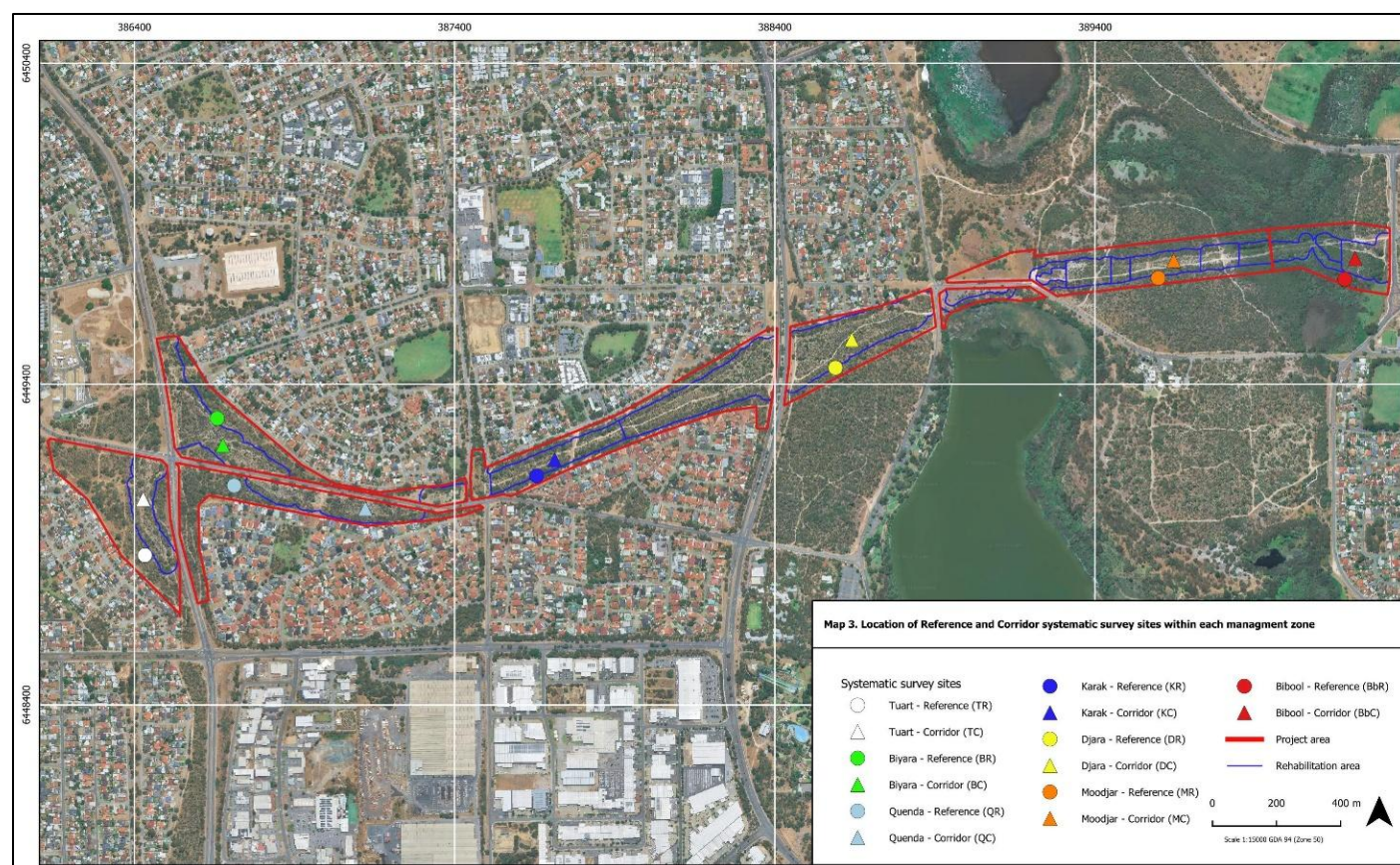
- Representation of target ecosystems/key habitats within each management zone
- Representation within the rehabilitation area (Corridor) and within a 20m buffer zone of the rehabilitation zone where possible (Reference)
- In proximity to where previous survey sites had been established (i.e. BCE, 2020), and
- Proximity to existing tracks to enable sites to be checked as early as possible each day.

Due to the open public accessibility (bush tracks, open nature of bushland areas and proximity to housing) to the area and vegetation buffer zones being extremely thin in some areas (i.e. Quenda), some reference sites (or pitfall buckets) were established outside of the 20m buffer zone, but were representative of the target ecosystem/habitat type.

This resulted in the following seven, paired systematic survey sites (See Table 1; Map 3);

Table 1. Systematic survey sites established in 2025

Site Code	Management Zone	Location	Disturbance	Condition	Habitat
TR	Tuart	Reference	Undisturbed	Remnant	Tuart-Banksia
TC	Tuart	Corridor	Disturbed	Rehabilitated	Tuart-Banksia
BR	Biyara	Reference	Undisturbed	Remnant	Jarra-Banksia
BC	Biyara	Corridor	Disturbed	Rehabilitated	Jarra-Banksia
QR	Quenda	Reference	Undisturbed	Remnant	Jarra-Banksia
QC	Quenda	Corridor	Disturbed	Rehabilitated	Jarra-Banksia
KR	Karak	Reference	Undisturbed	Remnant	Banksia-Woody pear
KC	Karak	Corridor	Disturbed	Rehabilitated	Banksia-Woody pear
DR	Djara	Reference	Undisturbed	Remnant	Jarra-Banksia
DC	Djara	Corridor	Disturbed	Rehabilitated	Jarra-Banksia
MR	Moodjar	Reference	Undisturbed	Remnant	Banksia woodland
MC	Moodjar	Corridor	Disturbed	Rehabilitated	Banksia woodland
BbR	Bibool	Reference	Undisturbed	Remnant	Wet forest-Woodland
BbC	Bibool	Corridor	Disturbed	Rehabilitated	Wet forest-Woodland



2.5 Sampling methods for vertebrate fauna

Surveys were conducted from August 2025 through to April 2026, whereby a variety of survey techniques were employed. This involved the following methods:

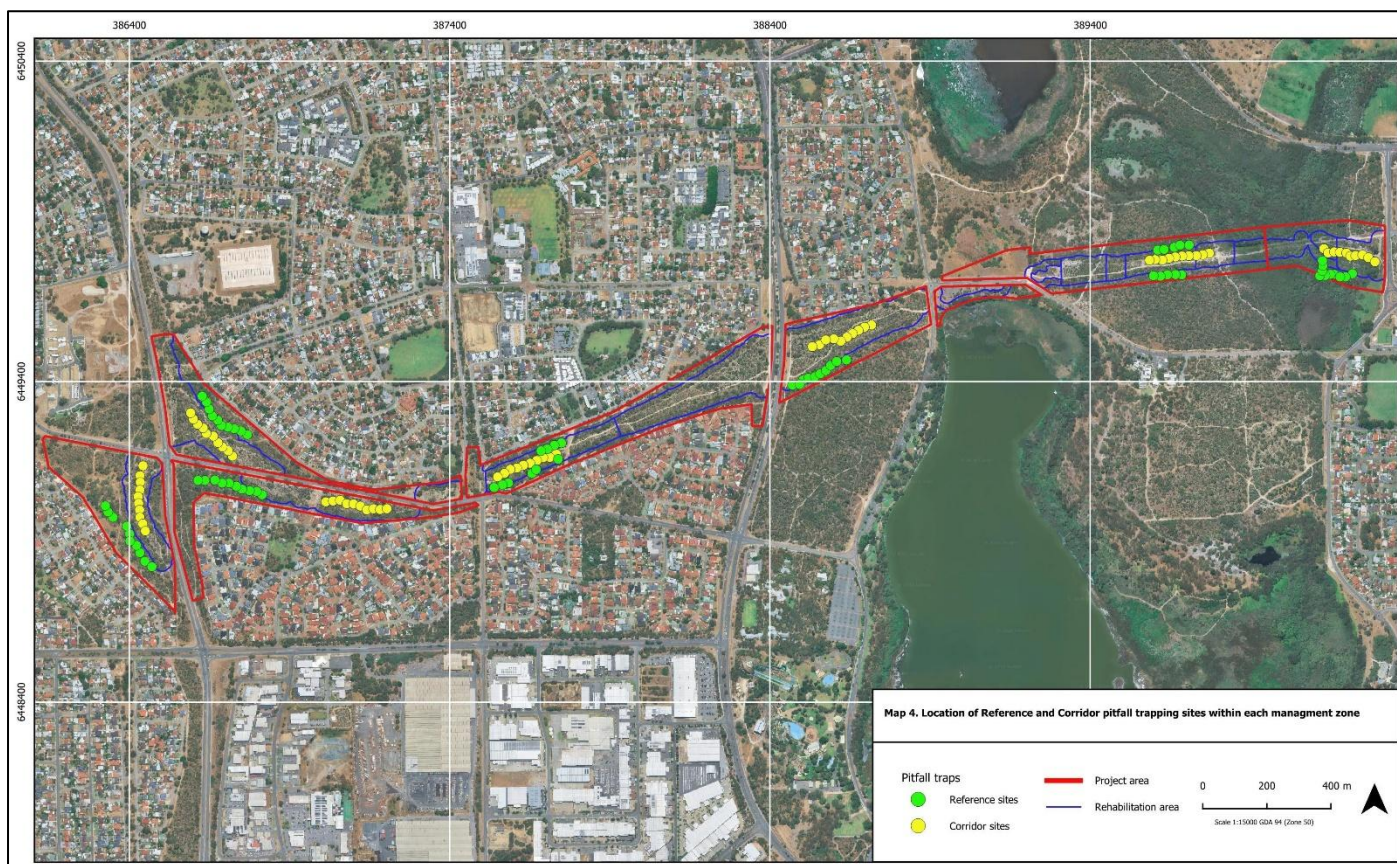
- Fauna trapping survey (pitfall trapping only)
- Systematic bird census
- Quenda foraging transects
- Motion sensor camera deployment
- Bat detection with the use of ultrasonic detectors
- Frog census
- Nocturnal spotlighting
- Targeted searches for vertebrate fauna, particularly those of conservation significance, including a visual assessment of Black cockatoo habitat (breeding, foraging and roosting potential)
- Tree hollow inspections for signs of Black cockatoo nesting or nesting potential
- Some additional vegetation assessments, and
- Opportunistic observations

2.5.1 Pitfall trapping

Pitfall trapping arrays were used to collect data on ground dwelling vertebrates across seven of the eight management zones, establishing a method for repeated measures to compare species presence-absence and mean abundances across a range of strata including reference and rehabilitation areas (treatment), target ecosystems (habitat) and season.

Trapping was undertaken at 14 sites, consisting of paired sites in each management zone (excluding Yaakan), with one site within the rehabilitation area and another in the reference area within, or approximate to, 20m of the rehabilitation area (buffer zone). Due to standing water and wet soil conditions in the far east of the survey area (Bibool management zone), trapping for terrestrial vertebrate fauna was undertaken at 13 of the proposed 14 trapping sites during October/November 2025, while all 14 sites were surveyed during February 2026. Sites were opened over two distinct phases (31st October - 8th November 2025 and 3rd – 10th February 2026), and operational for seven consecutive nights during each phase. Due to the lack of small, native terrestrial mammals persisting in the general area (rodents and Dasyurids), no Elliott traps were used, while funnel traps were also not used due open public accessibility of the project area and the potential for traps sites to be highly visible and potentially prone to tampering. Cage traps were also avoided, with motion cameras instead used for detecting larger mammals such as Quenda and Brush-tailed possums. A similar trapping arrangement was also used by BCE (2020), however there were slight differences with the fencing and spacing arrangement of trapping sites between BCE (2020) and the current survey (see BCE, 2020 for previous specific methods). Each trapping site in the current survey contained a total of 10 dry pitfall bucket traps, with traps spaced approximately 15-20m apart along a linear transect (approximately 150-200m in length). Each pitfall bucket contained a 6-7m length of flywire drift fence (~30cm high) which bisected the bucket.

All traps were checked each morning within three hours of sunrise. All captures were identified and released at point of capture. Details recorded of each capture included (where possible): Species, Age, Sex, Breeding condition and Tail condition (either complete or regenerated tail), as well as the site location and trap number of capture.



2.5.2 Bird Census

Bird census methods were used to collect data on bush bird species across seven of the eight management zones, establishing a method for repeated measures to compare species presence-absence and mean abundances across a range of strata including reference and rehabilitation areas (treatment), target ecosystem (habitat) and season.

Systematic bird census was undertaken along all 14 pitfall transects during each morning of trap checks. At each transect, a single observer watched and listened for birds along the entire length of the transect (~200m) and recorded species up to 25m either side of the centre line of the pitfall trapping transect (~1 hectare) for 10 minutes, with the combined paired sites (Reference & Rehabilitation) being equivalent to a standard 2ha/20minute bird survey. For bird observations, the following information was recorded:

- Date
- Observer
- Time start
- Temperature
- Site details (i.e. management zone, reference or rehabilitation)
- Species
- Abundance (within and outside survey area)
- Observation code (S – seen, H – heard)
- Location, either observed within (W) or outside (O) of the one-hectare survey area

Surveys were generally completed between 0500hrs and 1000hrs, ensuring peak bird activity was captured. Survey days and order of sites alternated, ensuring that each site had surveys undertaken at a diverse range of times. All birds recorded during systematic surveys were counted, including those observed flying overhead or in adjacent tenure. Surveys for birds were also carried out opportunistically when traversing through the study area.

For additional future metrics, behavioural codes were also recorded for each observation; these follow TERN's Ecological Field Monitoring Protocols (see O'Neill et al 2023) and included:

Activity type

- Calling only (CO)
- Flying overhead (FO)
- Flying overhead circling (FC)
- Flying within at strata level (FW)
- Resting on tree (RT)
- Resting on shrub (RS)
- Resting on ground (RG)
- Foraging on tree (FT)
- Foraging on shrub (FS)
- Foraging on ground (FG)

Breeding activity

- Nest with eggs (NE)
- Nest with young (NY)
- Young out of nest (YN)
- Recently fledged young (RF)
- Diagnostic behaviour (DB)
- Suggestive behaviour (SB)

2.5.3 Quenda foraging transects

Quenda foraging transects were used to collect data on Quenda digging frequency and abundance across six of the eight management zones, establishing a method for repeated measures to compare species presence-absence and mean abundances across a range of strata including reference and rehabilitation areas, and target ecosystems.

Similarly to BCE (2020), transects of 50 metres in length were established in proximity to trapping sites in reference and rehabilitated sites. A 50-metre tape measure was extended from the start to the end point and all Quenda diggings identified within one metre either side of the tape were recorded. As known individuals are unable to be determined using this method, figures recorded are used as an index of activity rather than the number of individuals occurring in a set area.

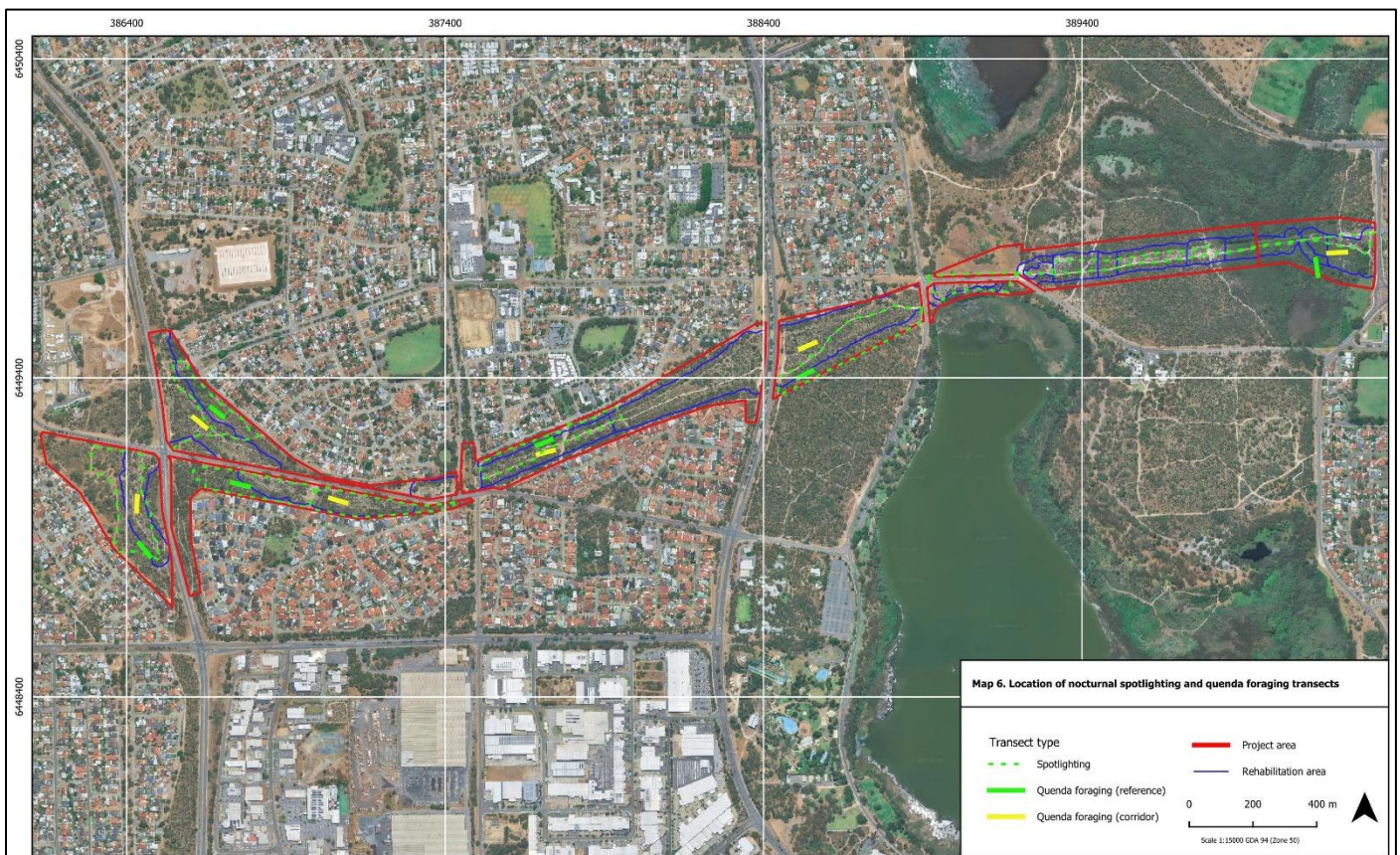
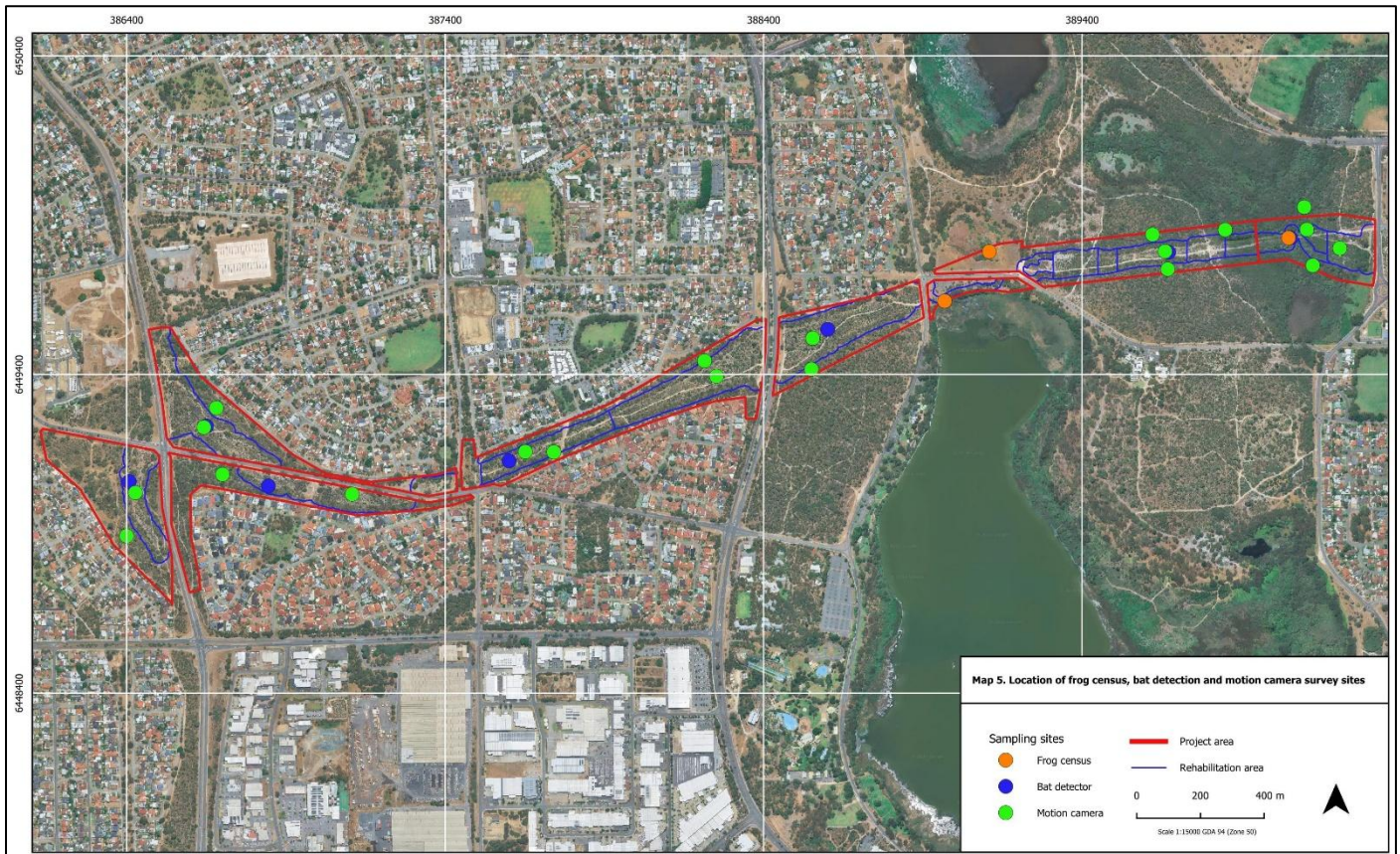
Quenda foraging surveys were undertaken across 12 of the 14 trapping transects. No surveys were undertaken within the Moodjar zone due to the persistence of rabbit (=Quenda) proof fences present throughout much of the rehabilitation zone. Surveys were still undertaken within the Bibool management zone, despite the presence of a fence, however the fence in this area is in much poorer condition and does not appear to exclude Quenda (or rabbits) from the rehabilitated areas. Bibool has previously had Quenda foraging transects undertaken (see BCE, 2020), as such, repeat surveys in this area were further justified. Previous Quenda foraging surveys undertaken in 2020 (BCE, 2020) however did not include the Tuart and Biyara management zones, however three paired transects were surveyed within (and adjacent to) the Djara management zone. Subsequently, the current survey included a paired foraging transect in both the Tuart and Biyara management zones but only included one paired transect within the Djara management zone.

2.5.4 Motion-sensor cameras

Deployment of motion-sensor cameras were used to collect data on key vertebrate species such as Quenda, possums and feral animals across seven of the eight management zones, establishing a method for repeated measures to compare species presence-absence and mean abundances across a range of strata including reference and rehabilitation areas, target ecosystems and season.

Camera trap surveys were undertaken over two seven-night periods in November 2025 and February 2026, whereby 39 motion-sensor camera units were deployed throughout the project area (19 in November 2025, 20 in February 2026). A set of paired cameras (14 in total) were deployed in all management zones (one in reference and one in rehabilitation), except Yaakan where no cameras were deployed due to high public accessibility. While an extra set was also deployed in the eastern section of the Karak management zone and the western end of the Bibool management zone. Remaining cameras were positioned in additional key areas (i.e. Roe swamp) for the detection of key species such as Brushtail possums or feral animals. Due to the proximity of housing and open public accessibility, cameras were placed off main pathways and baited with a mixture of peanut butter, oats, sardines and tuna oil concealed within a small PVC cannister fixed to the ground. Each camera was attached to a tree trunk/stump or existing fence post and positioned approximately 50 cm above the ground, angled downwards slightly and set to take a single photograph with a three second interval between successive photographs. Camera footage was downloaded at the end of each seven-night period.

Camera footage was later sorted into events (similar to BCE, 2020), whereby an event (detection of a particular species at a given time) can give a measure of abundance (i.e. relative abundance measure) at each camera. An event can be classified as one or more images of an animal categorised as an 'independent' detection. In this case (and similar to BCE, 2020), an image of an animal is considered independent if the duration between consecutive photographs was greater than five minutes before the next photograph is taken. Defining a measure of independence may allow for more accurate comparisons in possible future detection/monitoring programs. Although this method does not provide a direct measure of density, it does provide relative abundance of a species with the assumption that photo detection rates are related to animal abundance. For example, camera trapping rates (how many visits a species makes to a camera over a set period) should be largely related to abundance, whereby as density changes, the likelihood of encounters between individuals and cameras would also be expected to change.



2.5.5 Bat detection

Surveys for insectivorous microbats was predominantly undertaken for baseline species detection. Due to the wide-ranging nature of bats and proximity of reference and rehabilitated areas (thin, linear corridors), comparisons were not made for the current surveys, with data collected solely for presence/absence for each management zone, except Yaakan, which did not have surveys undertaken.

Surveys used the detection and identification of bat echolocation calls, which were recorded using Song Meter SM2BAT detectors (Wildlife Acoustics, Concord MA, USA). Surveys were conducted over seven nights during each survey season (November 2025 and February 2026), whereby calls were recorded over a single night within each management zone, excluding Yaakan (14 nights in total), focusing on the main target ecosystems occurring throughout the study area. At each location units were left unattended overnight, ensuring peak activity periods were sampled.

2.5.6 Frog census

A frog census was predominantly undertaken for baseline species detection, with data collected to solely assess presence-absence throughout wetland and dampland habitats within the project area. Surveys were undertaken over two consecutive nights on the 20th and 21st August 2026, with surveys focusing on the low-lying, wetland habitats (Roe Swamp) in the far east (Bibool), the degraded, swampland adjacent to Horse Lake (Moodjar), and the fringing wetland habitats of Bibra Lake where it borders Hope Road (Yaakan). Surveys predominantly focused on the detection of calling individuals, however individuals visually detected during surveys were also recorded. Surveys commenced approximately 30 minutes after sunset (approximately 6.45pm) and involved one person actively listening and traversing the general area on foot. One to two hours were spent on each evening inspecting the ground and low vegetation along the edge of swamps and along tracks using a head-torch to pick up on the frogs distinctive dull eyeshine. Active listening for frog calls was also undertaken during this time, whereby 5-10 minutes was spent at several locations in proximity to standing water.

2.5.7 Targeted searches

Targeted search methods were predominantly undertaken for baseline species detection, with data collected to solely assess presence-absence throughout the project area, however searches were undertaken in both reference and rehabilitation areas.

Targeted searches for terrestrial vertebrate fauna were undertaken at each management zone (except Yaakan) on several occasions but was primarily undertaken during the cooler weather when searches for fossorial reptiles can be more effective, with searches undertaken over three days on the 2nd and 30th September, and 1st October 2025. Searches involved two personnel traversing a large area of each management zone on foot to record sightings or evidence of fauna. This involved the raking of leaf litter and soft soil, the turning of rocks, fallen timber and rubbish, inspecting under bark, investigating hollows and burrows, and examining tracks, scats, and other traces of fauna. Each management zone was searched for up to one-hour (two-hour person hours) with the date, species, observation type and location of sighting (zone and reference/rehabilitation) being recorded. Searches also focused on the detection of conservation significant birds, including searches along the powerline corridor of Moodjar and Bibool (i.e. for species such as Peregrine falcon) and searching for evidence of black cockatoo species such as live individuals and foraging signs such as chewed *Banksia* spikes and Eucalypt nuts.

2.5.8 Spotlighting transects

Nocturnal spotlighting was predominantly undertaken for baseline species detection, with data collected to solely assess presence-absence throughout the project area, however searches were undertaken in both reference and rehabilitation areas.

Nocturnal spotlighting surveys were undertaken over three successive nights during each survey phase (Phase 1: 21st, 22nd and 23rd of November 2023; Phase 2: 5th, 6th and 7th February 2026), with surveys undertaken along seven pre-selected transects which optimised spatial and habitat coverage of project area and included all management zones. Each transect was traversed by two observers on foot (approximately 2-3km/hour) between 7.00 – 9.00pm using a 30W hand-held spotlight and head-torches. Each transect covered approximately one to two kilometres and utilised existing tracks within the project area and incorporated all habitats. During spotlight surveys, observations of all species detected were recorded. Species of conservation significance were marked with a handheld GPS at the point of observation.

2.5.9 Opportunistic records

Additional species opportunistically observed whilst traversing the survey area were recorded. Secondary evidence such as tracks, diggings, nests, scats and scratches were also recorded.

2.5.10 Vegetation assessments

Vegetation data (those collected from previous vegetation surveys i.e. FVC (2025), as well as additional vegetation assessments undertaken in the current survey) was used to compare basic vegetation structure between reference and rehabilitated sites. Only the most recent vegetation data was used to compare sites, which included sites surveyed by Focused Vision Consulting in 2024 (FVC, 2025), and one site from 2023 (all data provided by the City of Cockburn).

Where possible, an existing vegetation plot was used to compare vegetation structure. This generally involved using data previously collated from a vegetation plot in proximity to a fauna trapping site (generally within 100 metres and of a similar habitat/ecosystem type). Where there were no existing vegetation plots within proximity to a trapping site, a new plot was established.

Methods followed that detailed in Emerge (2018) undertaken by Murdoch University, with data being collected throughout the entire 20x20m plot, as well as 5x5m subplots and 50x50cm microplots, however only data collected from the 20x20m plot was used for site comparisons. This included:

- Percentage cover of bare ground
- Percentage cover of leaf litter
- Leaf litter depth, and
- Percentage cover of dominant overstorey flora species

2.6 Data analysis

Simple data analysis was used to compare fauna species recorded during the current survey to that recorded in the baseline survey and/or reference sites (Goal 10). Total species (per fauna group) recorded during the current survey, both overall and in the rehabilitated area only, is presented as an overall percentage of the total species recorded during baseline surveys undertaken by Phoenix (2011), as well as to the total number of known species from desktop assessment data. A basic visual presentation (bar chart) was also used to provide a comparison to the total number of species (per

fauna group) recorded in various surveys undertaken within (or in proximity to) the survey area as well as those identified from desktop searches.

More complex analysis was undertaken for ground-dwelling vertebrates and avifauna based on systematic pitfall trapping data and bird census data, where a Permutation multivariate analysis of variance (PERMANOVA) was used to test differences in species assemblage composition among groups (based on habitat, season or site disturbance). This method is similar in concept to AVOVA (analysis of variance) but is designed for multivariate ecological data and operates on a matrix of dissimilarities rather than individual variables. A Bray-Curtis dissimilarity matrix was calculated to represent differences in community composition between samples (captures or counts, for systematic pitfall trapping and bird surveys, respectively at a site within a season), and the analysis compared to variation among groups to variation within groups. A pseudo-F statistic was calculated as the ratio of among-group to within group variation, and its significance was assessed using 999 random permutations of the data, in which sample labels were repeatedly reshuffled to generate null distribution. Analyses were conducted using the vegan package in R. PERMANOVA was applied separately to bird survey data and pitfall trapping data.

Only simple comparisons of data were made between the following systematic survey methods:

- **Quenda foraging transects:** Comparison of total observations across each treatment (reference/undisturbed vs rehabilitation/disturbed) across the entire survey area, as well as for each management zone, and target ecosystem.
- **Motion camera surveys:** Comparison of relative abundance indices (independent detections) of key/detectable fauna (i.e. larger mammals/feral species) across each treatment (reference/undisturbed vs rehabilitation/disturbed) across the entire survey area.
- **Vegetation assessments:** Comparison of percentage cover and absolute measures of important ground cover attributes and dominant overstorey flora species across each treatment (reference/undisturbed vs rehabilitation/disturbed) for each management zone.

The remaining survey methods (frog census, bat detection, spotlighting transects and targeted searches) were solely undertaken to acquire additional data to assess presence-absence throughout the project area. Several of these methods were undertaken in both reference and rehabilitation areas, however no analysis was undertaken due to complications with the collection of accurate comparative data.

2.7 Black cockatoo assessment

The study area was visually inspected for the presence or evidence of black cockatoo breeding, night roosting and/or foraging. Any signs of live individuals and/or evidence of activity such as chew marks, branch clippings and chewed fruit and nuts were recorded.

2.7.1 Breeding habitat

Defined as habitat that contains known, suitable, or potential nesting trees (DAWE, 2022).

- A known nesting tree is a standing tree (dead or alive) containing a hollow where cockatoo breeding has been recorded or shows evidence of breeding (scratches, chew marks or feathers).
- Suitable nesting trees are those containing suitable hollows (>10cm wide), though have no evidence of use.
- A potential future nesting tree are those with a diameter at breast height (DBH) that may develop a hollow in the future. All trees with a diameter of 50cm or above were classed as potential future nesting trees.

All management zones except Tuart had been previously inspected for potential breeding trees in 2019/20 (BCE, 2020). While surveys by Phoenix (2011) conducted searches for potential breeding trees in the entire corridor area, including

the Tuart management zone. Trees identified in BCE (2020) as of breeding potential were revisited during the current surveys and inspected for signs of use with a remote, wifi enabled inspection camera (FerretPlus by Ferret Tools) and a 12 metre extendable fibreglass pole (Spiderbeam).

Additionally, all trees were inspected within the Tuart management zone. Habitat trees were individually identified and incorporated the following attributes:

- Unique identification number
- Species
- Waypoint (Latitude/longitude)
- Alive or dead
- Diameter at breast height (DBH)
- Presence of hollows
- Number of hollows
- Hollow width, and
- Any usage

2.7.2 Roosting habitat

Any groups of tall, native trees in or around the study area are assumed to provide potential roosting habitat for black cockatoo species. Any signs of roosting behaviour were also recorded and locations of nearby roosting sites are also provided.

2.7.3 Foraging habitat

Foraging habitat includes those habitats that typically comprise of plant species known to be consumed by black cockatoo species. These include a variety of proteaceous woodlands, shrublands and low heath, Eucalypt woodlands and a range of non-native habitats and species including pine trees and plantations, and parklands and gardens supporting species such as Cape Lilac (DAWE, 2022).

Foraging habitat is based on the presence of the following plant species known to be consumed by each species of black cockatoo, these include:

- **Carnaby's cockatoo:** Proteaceous species such as *Banksia* and/or *Hakea* species, particularly Parrot bush (*Banksia sessilis*), and woodland tree species (many *Eucalyptus/Corymbia* species), particularly Tuart (*Eucalyptus gomphocephala*) and Marri and Pine trees (DAWE, 2022; Groom, 2011; Johnstone et. al. 2011).
- **Forest red-tailed black cockatoo:** Woodland tree species, particularly Jarrah (*Eucalyptus marginata*) and Marri, and Tuart, Redheart (*Eucalyptus decipiens*) and the introduced Cape Lilac (DAWE, 2022; Johnstone et. al. 2011; Johnstone et. al. 2017).

All management zones had been previously mapped and classified for foraging potential in 2019/20 (BCE, 2020). However, all signs of foraging during the current survey, including observations of live individuals, were recorded and mapped across the survey area highlighting what areas contain higher levels of foraging activity.

2.8 Taxonomy and nomenclature

Field identification of vertebrate species was based on the following field guides:

Birds	Simpson & Day (1999); Pizzey & Knight (1998); Morcombe & Stewart (2010)
Mammals	Menkhorst & Knight (2001); van Dyck <i>et al.</i> (2013)
Reptiles	Wilson & Swan (2021)
Amphibians	Tyler & Doughty (2009)

- In this report, nomenclature follows the Western Australian Museum's '*Checklist of the Fauna of Western Australia*'. WAM (2025).

3. Results & discussion

3.1 Database searches

Desktop assessments identified up to 205 vertebrate species either to be known, likely, possible or unlikely to occur within the survey area. This includes nine species of frog, 44 species of reptile, 22 species of mammal (16 native and six introduced) and 132 species of bird (Tables 2-5).

Excluding migratory and wetland/waterbirds, which are unlikely to regularly use the project area, desktop assessments resulted in the identification of six species of conservation significance that have previously been confirmed within the project area, including:

- The EPBC listed Endangered Carnaby's cockatoo (*Zanda latirostris*)
- The EPBC listed Vulnerable Forest red-tailed black cockatoo (*Calyptorhynchus banksia naso*)
- The Migratory/Marine Rainbow Bee-eater (*Merops ornatus*)
- The Migratory/Wetland Eastern osprey (*Pandion cristatus*)
- The Priority 4 Quenda (*Isodon fusciventer*), and
- The Priority 3 Perth-lined Slider (*Lerista lineata*)

Additionally, a single frog, five reptiles, two mammals and 23 bush bird species of local conservation significance were also identified:

- Quacking frog (*Crinia georgiana*)
- Oblong turtle (*Chelodina oblonga*), Keeled legless lizard (*Pletholax gracilis*), Heath monitor (*Varanus rosenbergi*), Southwest cool skink (*Acritoscincus trilineatus*), and Southwestern crevice-skink (*Egernia napoleonis*)
- Common brushtail possum (*Trichosurus vulpecula hypoleucus*) and Western grey kangaroo (*Macropus fuliginosus*)
- Common bronzewing, Little eagle, Square-tailed kite, Collared sparrowhawk, White-browed scrub-wren, New-holland honeyeater, White-cheeked honeyeater, Brown goshawk, Splendid fairy-wren, Weebill, Nankeen night-heron, Whistling kite, Grey shrike-thrush, Western wattlebird, Wedge-tailed eagle, Brown falcon, White-naped honeyeater, Tawny-crowned honeyeater, Yellow-rumped thornbill, Inland thornbill, Western thornbill, Western golden whistler, and Dusky woodswallow

Several additional species of conservation significance are known from nearby to the survey area, including large reserves containing waterbodies such as Bibra Lake and North Lake. Excluding the predominantly wetland/waterway species such as freshwater wetland species (ducks, grebes, cormorants) and migratory wading birds, several additional species, not yet confirmed within the study area, may also occur, including:

- The Priority 3 Jewelled Ctenotus (*Ctenotus gemmula*)
- The Priority 3 Black-striped snake (*Neelaps calonotos*)
- The Priority 4 Western brush wallaby (*Notamacropus irma*)
- The Priority 4 Western false pipistrelle (*Falsitrellus mackenziei*)
- The Priority 4 Water rat (*Hydromys chrysogaster*), and
- The Specially Protected Peregrine falcon (*Falco peregrinus*)

While several additional species of local conservation significance may also occur, including:

- Western swamp skink (*Lissolepis luctuosa*)
- Western blue-tongued lizard (*Tiliqua occipitalis*)
- Yellow-faced whipsnake (*Demansia reticulata*)
- Crowned snake (*Elapognathus coronata*)
- Echidna (*Tachyglossus aculeatus*)
- Honey possum (*Tarsipes rostratus*)
- Tawny-crowned honeyeater, and
- Black-faced woodswallow

Table 2. Amphibians expected to occur, known to occur and/or recorded during the current survey within the Roe8 study area.

Species	Conservation status				Likelihood	Survey within study area			Survey nearby to study area			
	EPBC	BC	Priority	Local		Current survey	BCE 2020	Phoenix 2011	FaunaTrack 2022	FaunaTrack 2018	Bamford & Wilcox 2005	Cornwall 2004
Pelodryadidae (Tree Frogs)												
Slender Tree FrogLitoria adelaidensis					Known	+		+		+		
Motorbike FrogLitoria moorei					Known	+		+		+		+
Limnodynastidae (Large Ground Frogs)												
Moaning FrogHeleioporus eyrei					Known	+	+	+	+	+	+	+
PobblebonkLimnodynastes dorsalis					Known	+	+	+	+	+	+	+
Myobatrachidae (Small Ground Frogs)												
Quacking FrogCrinia georgiana				^	Known	+	+	+	+			
Clicking FrogCrinia glauerti					Known	+	+	+				
Squelching FrogCrinia insignifera					Known	+		+		+		
Turtle FrogMyobatrachus gouldii					Known			+				+
Crawling ToadletPseudophryne guentheri					Known							
Total Frogs					9	7	4	8	3	5	2	4

Table 3. Reptiles expected to occur, known to occur and/or recorded during the current survey within the Roe8 study area.

Species	Conservation status				Likelihood	Survey within study area			Survey nearby to study area			
	EPBC	BC	Priority	Local		Current survey	BCE 2020	Phoenix 2011	FaunaTrack 2022	FaunaTrack 2018	Bamford & Wilcox 2005	Cornwall 2004
Cheluidae (Freshwater turtles)												
Oblong Turtle <i>Chelodina oblonga</i>				^	Known		+	+		+		+
Agamidae (Dragon Lizards)												
Dwarf Bearded Dragon <i>Pogona minor</i>					Known	+	+	+		+		+
Western Heath Dragon <i>Ctenophorus adelaidensis</i>					Possible							
Diplodactylidae (Gondwanan Geckos)												
Southern Spiny-tailed Gecko <i>Strophurus spinigerus</i>					Likely	+						
Gekkonidae (Cosmopolitan Geckos)												

Species	Conservation status				Likelihood	Survey within study area			Survey nearby to study area			
	EPBC	BC	Priority	Local		Current survey	BCE 2020	Phoenix 2011	FaunaTrack 2022	FaunaTrack 2018	Bamford & Wilcox 2005	Cornwall 2004
Marbled Gecko <i>Christinus marmoratus</i>					Known	+	+	+	+	+	+	
Pygopodidae (Legless Lizards)												
Sandplain Worm Lizard <i>Aprasia repens</i>					Known	+		+				
Fraser's Legless Lizard <i>Delma fraseri</i>					Likely							
Gray's Legless Lizard <i>Delma grayii</i>					Likely							
Burton's Snake Lizard <i>Lialis burtonis</i>					Known	+	+	+	+	+	+	
Keeled Legless Lizard <i>Pletholax gracilis</i>				^	Known			+				
Common Scaly-foot <i>Pygopus lepidopodus</i>					Known			+				
Scincidae (Skinks)												
Cool Skink <i>Acritoscincus trilineatus</i>			P3	^	Known	+	+	+	+	+	+	+
Fence Skink <i>Cryptoblepharus buchananii</i>					Known	+	+	+	+	+	+	+
Limestone Ctenotus <i>Ctenotus australis</i>					Known	+	+	+	+	+	+	+
West Coast Ctenotus <i>Ctenotus fallens</i>					Known	+		+				
Jewelled Ctenotus (SCP population) <i>Ctenotus gemmula</i>					Possible							
Odd-striped Ctenotus <i>Ctenotus impar</i>					Possible							
Western Swamp Skink <i>Lissolepis luctuosa</i>				^	Likely				+	+		
King's Skink <i>Egernia kingii</i>			P3		Possible	?						?
Napoleon's Skink <i>Egernia napoleonis</i>				^	Known	+	+	+	+		+	+
Two-toed Mulch Skink <i>Hemiergis quadrilineata</i>					Known	+	+	+	+	+	+	+
Elegant Slider <i>Lerista elegans</i>					Known	+	+	+	+	+	+	
Perth Lined Slider <i>Lerista lineata</i>					Known	+	+	+	+	+	+	+
Dwarf Skink <i>Menetia greyii</i>					Known	+	+	+	+	+	+	+
West Coast Morethia <i>Morethia lineocellata</i>					Known	+		+				+
Obscure Skink <i>Morethia obscura</i>					Known	+	+	+	+	+	+	+
Western Blue-tongued Lizard <i>Tiliqua occipitalis</i>				^	Likely							
Bobtail <i>Tiliqua rugosa</i>					Known	+	+	+	+	+	+	+
Varanidae (Goannas)												
Gould's Goanna <i>Varanus gouldii</i>					Known							+

Species	Conservation status				Likelihood	Survey within study area			Survey nearby to study area			
	EPBC	BC	Priority	Local		Current survey	BCE 2020	Phoenix 2011	FaunaTrack 2022	FaunaTrack 2018	Bamford & Wilcox 2005	Cornwall 2004
Rosenberg's Goanna <i>Varanus rosenbergi</i>				^	Known							
Typhlopidae (Blind Snakes)												
Southern Blind Snake <i>Anilius australis</i>					Known	+				+	+	
Pythonidae (Pythons)												
South-west Carpet Python <i>Morelia spilota imbricata</i>			S		Unlikely	+						
Elapidae (Venomous Snakes)												
Narrow-banded Shovel-nosed Snake <i>Brachyuropsis fasciolatus</i>					Known							
Southern Shovel-nosed Snake <i>Brachyuropsis semifasciata</i>					Possible							
Yellow-faced Whipsnake <i>Demansia reticulata</i>				^	Possible							
Crowned Snake <i>Elapognathus coronatus</i>				^	Possible							
Black-naped Snake <i>Naropsis bimaculatus</i>					Likely							
Black-striped Snake <i>Neelaps calonotos</i>			P3		Possible							
Tiger Snake <i>Notechis scutatus</i>					Known			+	+	+		+
Gould's Hooded Snake <i>Suta gouldii</i>					Known							
Dugite <i>Pseudonaja affinis</i>					Known	+		+	+	+	+	+
Jan's Banded Snake <i>Simoselaps bertholdi</i>					Possible							
Total Reptiles					44	20	14	21	15	17	14	15

Table 4. Mammals expected to occur, known to occur and/or recorded during the current survey within the Roe8 study area.

Species	Conservation status				Likelihood	Survey within study area			Survey nearby to study area		
	EPBC	BC	Priority	Local		Current survey	BCE 2020	Phoenix 2011	FaunaTrack 2022	FaunaTrack 2018	Bamford & Wilcox 2005
Tachyglossidae (Echidnas)											
Echidna <i>Tachyglossus aculeatus</i>				^	Unlikely						
Peramelidae (Bandicoots)											
Quenda or Southwestern Brown Bandicoot <i>Isodon fusciventer</i>			P4		Known	+	+	+	+	+	+
Macropodidae (Kangaroos and Wallabies)											

Species	Conservation status				Likelihood	Survey within study area			Survey nearby to study area		
	EPBC	BC	Priority	Local		Current survey	BCE 2020	Phoenix 2011	FaunaTrack 2022	FaunaTrack 2018	Bamford & Wilcox 2005
Western Grey Kangaroo				^	Known			+			
Western Brush Wallaby			P4		Unlikely						
Phalangeridae (Brushtail Possums)											
Common Brushtail Possum				^	Known	+		+	+		
Tarsipedidae (Honey Possum)											
Honey Possum				^	Possible						
Molossidae (Free-tail Bats)											
White-striped Mastiff Bat					Known	+		+	+	+	
Western Freetail Bat					Known			+	+	+	
Vespertilionidae											
Southern Forest Bat			P4		Known	+		+	+	+	
Gould's Wattled Bat					Known	+		+	+	+	
Chocolate Wattled Bat					Likely	+					
Western False Pipistrelle					Possible						
Lesser Long-eared Bat					Known	+		+	+	+	
Gould's Long-eared Bat					Known						
Greater Long-eared Bat					Known				+	+	
Muridae (Rats and Mice)											
Rakali or Water Rat			P4		Possible						
House Mouse					Known	+	+	+	+	+	+
Black Rat					Known	+	+	+	+	+	+
Leporidae (Rabbit)											
European Rabbit					Known	+	+	+			
Canidae (Fox and Dog)											
Domestic Dog					Known	+					
European Red Fox					Known	+	+	+			
Felidae (Cats)											

Species	Conservation status				Likelihood	Survey within study area			Survey nearby to study area		
	EPBC	BC	Priority	Local		Current survey	BCE 2020	Phoenix 2011	FaunaTrack 2022	FaunaTrack 2018	Bamford & Wilcox 2005
Cat <i>*Felis catus</i>					Known	+		+			
Total Mammals					22	13	5	13	10	9	3

Table 5. Birds expected to occur, known to occur and/or recorded during the current survey within the Roe8 study area.

Species		Conservation status				Likelihood	Survey within study area			Survey nearby to study area		
		EPBC	BC	Priority	Local		Current survey	BCE 2020	Phoenix 2011	FaunaTrack 2022	Birddata	
Anatidae (ducks & swans)												
Wandering Whistling-Duck	<i>Dendrocygna arcuata</i>			P4		Known	+				+	
Blue-billed Duck	<i>Oxyura australis</i>					Known			+		+	+
Pink-eared Duck	<i>Malacorhynchus membranaceus</i>				^	Known			+		+	+
Black Swan	<i>Cygnus atratus</i>					Known			+		+	+
Radjah Shelduck	<i>Radjah radjah</i>				Known			+				
Australian Shelduck	<i>Tadorna tadornoides</i>				Known			+		+	+	
Hardhead	<i>Aythya australis</i>				^	Known				+	+	
Australasian Shoveler	<i>Spatula rhynchotis</i>				^	Known			+		+	
Pacific Black Duck	<i>Anas superciliosa</i>					Known			+		+	
Gray Teal	<i>Anas gracilis</i>					Known			+		+	
Chestnut Teal	<i>Anas castanea</i>					Known			+			
Freckled Duck	<i>Stictonetta naevosa</i>				^	Unlikely				+		
Musk Duck	<i>Biziura lobata</i>				^	Known			+		+	
Australian Wood Duck	<i>Chenonetta jubata</i>					Known				+	+	
Podicipedidae (grebes)												
Australasian Grebe	<i>Tachybaptus novaehollandiae</i>					Known				+	+	
Hoary-headed Grebe	<i>Poliocephalus poliocephalus</i>					Known			+			
Great Crested Grebe	<i>Podiceps cristatus</i>					Known				+	+	
Turnicidae (button-quails)												
Painted button-quail	<i>Turnix varius</i>					Known						

Species		Conservation status				Likelihood	Survey within study area			Survey nearby to study area	
		EPBC	BC	Priority	Local		Current survey	BCE 2020	Phoenix 2011	FaunaTrack 2022	Birddata
Columbidae (pigeons & doves)											
Rock Dove	*Columba livia					Known	+		+		+
Spotted Dove	*Streptopelia chinensis					Known	+	+	+	+	+
Laughing Dove	Streptopelia senegalensis					Known	+	+	+	+	+
Common Bronzewing	Phaps chalcoptera				^	Known	+				+
Crested Pigeon	Ocyphaps lophotes					Known	+		+	+	+
Cuculidae (cuckoos)											
Horsfield's Bronze-Cuckoo	Chalcites basal		IA			Known		+			
Shining Bronze-Cuckoo	Chalcites lucidus					Known	+		+		+
Fan-tailed Cuckoo	Cacomantis flabelliformis					Known	+			+	+
Pallid Cuckoo	Heteroscenes pallidus					Known					
Podargidae (frogmouths)											
Tawny Frogmouth	Podargus strigoides					Known	+			+	+
Aegothelidae (owlet-nightjars)											
Australian owlet nightjar	Aegotheles cristatus					Known					+
Apododae (swifts & swiftlets)											
Fork-tailed Swift	Apus pacificus	MI/MA	IA			Possible					
Rallidae (crakes & rails)											
Buff-banded Rail	Hypotaenidia philippensis					Likely					
Australian Spotted Crake	Porzana fluminea					Likely					
Baillon's Crake	Zapornia pusilla					Likely					
Spotless Crake	Zapornia tabuensis					Likely				+	
Australian Swampphen	Porphyrio porphyrio					Known			+	+	+
Dusky Moorhen	Gallinula tenebrosa				^	Known			+	+	+
Black-tailed Native-hen	Tribonyx ventralis					Known			+		
Eurasian Coot	Fulica atra					Known			+	+	+
Recurvirostridae (stilts & avocets)											
Red-necked Avocet	Recurvirostra novaehollandiae					Known			+		

Species	Conservation status				Likelihood	Survey within study area			Survey nearby to study area	
	EPBC	BC	Priority	Local		Current survey	BCE 2020	Phoenix 2011	FaunaTrack 2022	Birdata
Pied Stilt <i>Himantopus leucocephalus</i>					Known			+		+
Charadriidae (plovers & dotterels)										
Black-fronted Dotterel <i>Elseya melanops</i>					Known			+		
Scolopacidae (godwits, sandpipers & stints)										
Common Greenshank <i>Tringa nebularia</i>	EN	IA		^	Known					+
Marsh Sandpiper <i>Tringa stagnatilis</i>	MI/WT	IA			Known					+
Laridae (gulls & terns)										
Silver Gull <i>Chroicocephalus novaehollandiae</i>					Known	+		+	+	+
Fairy Tern <i>Sternula nereis</i>	VU	VU			Known					+
Caspian Tern <i>Hydroprogne caspia</i>	MI/MA	IA			Known					+
Pelicanidae (pelican)										
Australian Pelican <i>Pelecanus conspicillatus</i>					Known			+	+	+
Ardeidae (bittern, egrets & herons)										
Nankeen Night-Heron <i>Nycticorax caledonicus</i>				^	Known	+		+	+	+
Eastern Cattle Egret <i>Bubulcus ibis</i>		IA			Known					+
Eastern Great Egret <i>Ardea modesta</i>		IA			Known			+	+	+
White-faced Heron <i>Egretta novaehollandiae</i>					Known	+		+	+	+
Little Egret <i>Egretta garzetta</i>				^	Known				+	+
Threskiornithidae (ibis & spoonbills)										
Australian White Ibis <i>Threskiornis moluccus</i>					Known	+	+	+	+	+
Straw-necked Ibis <i>Threskiornis spinicollis</i>					Known	+		+	+	+
Yellow-billed Spoonbill <i>Platalea flavipes</i>					Known			+		+
Glossy Ibis <i>Plegadis falcinellus</i>		IA			Known			+	+	+
Phalacrocoracidae (cormorants)										
Little Pied Cormorant <i>Microcarbo melanoleucos</i>					Known			+	+	+
Great Cormorant <i>Phalacrocorax carbo</i>					Known			+		+
Little Black Cormorant <i>Phalacrocorax sulcirostris</i>					Known				+	+
Great Pied Cormorant <i>Phalacrocorax varius</i>					Known					+

Species		Conservation status				Likelihood	Survey within study area			Survey nearby to study area		
		EPBC	BC	Priority	Local		Current survey	BCE 2020	Phoenix 2011	FaunaTrack 2022	Birddata	
Anhingidae (Darter)												
Australasian Darter	Anhinga novaehollandiae					Known			+		+	
Accipitridae (eagles, harriers & kites)												
Eastern Osprey	Pandion haliaetus	MI/WT				Known	+		+			
Black-shouldered Kite	Elanus axillaris					Known			+			+
Square-tailed Kite	Lophoictinia isura					Known			+			+
Wedge-tailed Eagle	Aquila audax					Known			+			+
Little Eagle	Hieraaetus morphnoides					Known			+		+	
Swamp Harrier	Circus approximans					Known			+		+	+
Brown Goshawk	Accipiter fasciatus					Known	+	+	+		+	+
Collared Sparrowhawk	Accipiter cirrocephalus					Known	+				+	+
Whistling Kite	Haliastur sphenurus					Known	+		+		+	
Tytonidae (barn owls)												
Barn Owl	Tyto alba					Known					+	
Strigidae (hawk owls)												
Southern Boobook	Ninox boobook					Known	+		+		+	
Meropidae (bee-eaters)												
Rainbow Bee-eater	Merops ornatus		IA			Known	+	+	+	+	+	
Halcyonidae (kingfishers)												
Sacred Kingfisher	Todiramphus sanctus					Known	+	+	+	+	+	
Laughing Kookaburra	*Dacelo novaeguineae					Known			+	+	+	+
Falconidae (falcons)												
Nankeen Kestrel	Falco cenchroides					Known	+	+	+		+	
Eurasian Hobby	#Falco subbuteo					Known						
Australian Hobby	Falco longipennis					Known						
Brown Falcon	Falco berigora					Known						
Peregrine Falcon	Falco peregrinus					Likely						
Cacatuidae (cockatoos & corellas)												

Species		Conservation status				Likelihood	Survey within study area			Survey nearby to study area	
		EPBC	BC	Priority	Local		Current survey	BCE 2020	Phoenix 2011	FaunaTrack 2022	Birddata
Red-tailed Black-Cockatoo	<i>Calyptorhynchus banksii naso</i>	VU	VU			Known	+	+	+	+	+
Carnaby's Cockatoo	<i>Calyptorhynchus latirostris</i>	EN	EN			Known	+	+	+	+	+
Galah	<i>Eolophus roseicapilla</i>					Known	+	+	+	+	+
Eastern Long-billed Corella	<i>*Cacatua tenuirostris</i>					Known	+	+			+
Little Corella	<i>Cacatua sanguinea</i>					Known	+	+	+	+	+
Psittacidae (parrots)											
Red-capped Parrot	<i>Purpureicephalus spurius</i>					Known	+	+	+		+
Australian Ringneck	<i>Barnardius zonarius</i>					Known	+	+	+	+	+
Elegant Parrot	<i>Neophema elegans</i>					Known			+		
Purple-crowned Lorikeet	<i>Glossopsitta porphyrocephala</i>					Possible					
Rainbow Lorikeet	<i>*Trichoglossus moluccanus</i>					Known	+	+	+	+	+
Maluridae (fairy-wrens)											
Splendid Fairy-wren	<i>Malurus splendens</i>				^	Known	+	+	+	+	+
Meliphagidae (honeyeaters)											
Brown Honeyeater	<i>Lichmera indistincta</i>					Known	+	+	+	+	+
New Holland Honeyeater	<i>Phylidonyris novaehollandiae</i>				^	Known	+	+	+	+	+
White-cheeked Honeyeater	<i>Phylidonyris niger</i>				^	Known	+		+		+
Brown-headed Honeyeater	<i>Melithreptus brevirostris</i>					Possible					
White-naped Honeyeater	<i>Melithreptus lunatus</i>				^	Known					+
Tawny-crowned Honeyeater	<i>Glyciphila melanops</i>				^	Possible					
Western Spinebill	<i>Acanthorhynchus superciliosus</i>					Known		+	+		
Western Wattlebird	<i>Anthochaera lunulata</i>				^	Known	+	+	+	+	+
Red Wattlebird	<i>Anthochaera carunculata</i>					Known	+	+	+	+	+
Singing Honeyeater	<i>Gavicalis virescens</i>					Known	+	+	+	+	+
Pardalotidae (pardalotes & thornbills)											
Spotted Pardalote	<i>Pardalotus punctatus</i>					Known	+		+		+
Striated Pardalote	<i>Pardalotus striatus</i>					Known	+	+	+	+	+
Western Gerygone	<i>Gerygone fusca</i>					Known	+	+	+	+	+

Species		Conservation status				Likelihood	Survey within study area			Survey nearby to study area	
		EPBC	BC	Priority	Local		Current survey	BCE 2020	Phoenix 2011	FaunaTrack 2022	Birddata
Weebill	<i>Smicrornis brevirostris</i>				^	Known	+	+	+	+	+
White-browed Scrub-wren	<i>Sericornis frontalis</i>				^	Known	+	+	+	+	+
Yellow-rumped Thornbill	<i>Acanthiza chrysorrhoa</i>				^	Known		+	+	+	+
Inland Thornbill	<i>Acanthiza apicalis</i>				^	Known			+		
Western Thornbill	<i>Acanthiza inornata</i>				^	Known			+		+
Varied Sittella	<i>Daphoenositta chrysoptera</i>					Known	+		+		+
Campephagidae (cuckoo-shrikes & trillers)											
Black-faced Cuckoo-shrike	<i>Coracina novaehollandiae</i>					Known	+	+	+	+	+
Pachycephalidae (whistlers & shrike-thrush)											
Rufous Whistler	<i>Pachycephala rufiventris</i>					Known	+	+	+	+	+
Western Golden Whistler	<i>Pachycephala occidentalis</i>				^	Known					+
Grey Shrike-thrush	<i>Colluricincla harmonica</i>				^	Known	+		+	+	+
Artamidae (woodswallows & magpies)											
Australian Magpie	<i>Gymnorhina tibicen</i>					Known	+	+	+	+	+
Grey Butcherbird	<i>Cracticus torquatus</i>					Known	+	+	+	+	+
Dusky Woodswallow	<i>Artamus cyanopterus</i>				^	Known			+		
Black-faced Woodswallow	<i>Artamus cinereus</i>				^	Possible					
Corvidae (ravens & crows)											
Australian Raven	<i>Corvus coronoides</i>					Known	+	+	+	+	+
Dicruidae (fantails & flycatchers)											
Magpie-lark	<i>Grallina cyanoleuca</i>					Known	+	+	+	+	+
Willie Wagtail	<i>Rhipidura leucophrys</i>					Known	+	+	+	+	+
Grey Fantail	<i>Rhipidura fuliginosa</i>					Known	+	+	+	+	+
Petroicidae (robins)											
Red-capped Robin	<i>Petroica goodenovii</i>					Known					+
Mistletoebird	<i>Dicaeum hirundinaceum</i>					Known	+	+		+	+
Passeridae (mannikins)											
Chestnut-breasted Mannikin	<i>*Lonchura castaneothorax</i>					Known	+			+	

Species	Conservation status				Likelihood	Survey within study area			Survey nearby to study area	
	EPBC	BC	Priority	Local		Current survey	BCE 2020	Phoenix 2011	FaunaTrack 2022	Birdata
Motacillidae (pipits)										
Australasian Pipit	Anthus novaeseelandiae					Likely				
Sylviidae (old world warblers)										
Little Grassbird	Poodytes gramineus					Known				+
Australian Reed-Warbler	Acrocephalus australis					Known		+	+	+
Hirundinidae (swallows & martins)										
White-backed Swallow	Cheramoeca leucosterna					Possible				
Tree Martin	Petrochelidon nigricans					Known	+	+	+	+
Welcome Swallow	Hirundo neoxena					Known	+	+	+	+
Zosteropidae (white-eyes)										
Silvereye	Zosterops lateralis					Known	+	+	+	+
Total Birds					132	57	40	86	74	103

+ = Species recorded during the 2025/26 survey and or previous surveys

EN = Endangered (EPBC Act & BC Act)

VU = Vulnerable (EPBC Act & BC Act)

MI/MA = Migratory Marine species (EPBC Act)

MI/WT = Migratory Wetland species (EPBC Act)

S = Specially Protected (BC Act)

P2 = Priority 2 (WA)

P3 = Priority 3 (WA)

P4 = Priority 4 (WA)

^ = Locally significant due to a reduced distribution and/or declining population on the swan coastal plain

IA = Migratory birds protected under International Bird Agreements

= Vagrant species

* = Introduced species

3.2 Vertebrate fauna assemblage

3.2.1 Comparisons to baseline fauna diversity

The following results directly relate to baseline fauna surveys undertaken during 2009/2010 (Phoenix, 2011) to provide comparison data in relation to Goal 10 outlined in the RMP.

The survey period from August-November 2025 and February-April 2026, incorporated 1890 pitfall trapping nights, 273 motion camera nights, 14 bat detector nights, 32 person hours of systematic bird surveys, 18 person hours of nocturnal spotlighting, 16 person hours of Quenda foraging transects, four person hours of frog surveys, and 28 person hours of targeted searches. This resulted in 4334 individual fauna detections of 97 vertebrate fauna species.

The overall vertebrate fauna assemblage observed was generally similar to previous fauna surveys undertaken within or surrounding the project area (see Tables 2 - 5; Figure 1).

Frog species were relatively high, with seven species detected out of a potential nine previously recorded in (or in proximity to) the survey area (see Figure 1; Table 2). This figure equates to 87.5% of frog fauna previously detected during baseline surveys (Phoenix, 2011) and 78% of the known frog fauna (Table 6). While frog species detected in the rehabilitation areas equates to 75% of the total frog fauna previously detected during baseline surveys (Phoenix, 2011) and 67% of the known frog fauna, achieving the minimum objective of Goal 10 in the RMP (frequency of records of native fauna species $\geq$ 50% of that recorded in the baseline survey and/or reference sites), and edging very close to the primary objective in the RMP (frequency of records of native fauna species $\geq$ 100% of that recorded in the baseline survey and/or reference sites) (Table 6). Species detections during the current survey also included the locally significant Quacking frog (*Crinia georgiana*), however, the Turtle frog (*Myobatrachus gouldii*), although not detected during the current surveys, has previously been detected from within the project area (Phoenix 2011; Cornwall 2004), and is likely to occur within *Banksia* woodland habitats in the east of the project area (i.e. Moodjar). While the Crawling toadlet (*Pseudophryne guentheri*) had previously been recorded in 1985 (see Cornwall 2004), however the current presence of the species in the area is unknown, with few records known to occur within the broader area.

Reptile species were also high, with a total of 20 species recorded out of a possible 26 previously recorded in (or in proximity to) the survey area (see Figure 1; Table 3). This figure equates to 95.2% of reptile fauna previously detected during baseline surveys (Phoenix, 2011) and 76.9% of the known reptile fauna (Table 6). While reptile species detected in the rehabilitation areas equates to 81% of the total reptile fauna previously detected during baseline surveys (Phoenix, 2011) and 65.4% of the known reptile fauna, achieving the minimum objective of Goal 10 in the RMP (frequency of records of native fauna species $\geq$ 50% of that recorded in the baseline survey and/or reference sites), and close to the primary objective in the RMP (frequency of records of native fauna species $\geq$ 100% of that recorded in the baseline survey and/or reference sites) (Table 6). Species detections during the current survey included two species of conservation significance, the Priority 3 Perth-lined slider (*Lerista lineata*) and the Specially Protected South-west carpet python (*Morelia spilota imbricata*), the latter of which has not previously been detected within the survey area and has thought to declined dramatically along the Swan Coastal Plain (Bush et. al. 2010). While a further two species of local conservation significance were also recorded, the South-western crevice skink (*Egernia napoleonis*) and South-west cool skink (*Acritoscincus trilineatus*). In addition, the Soft spiny-tailed gecko (*Strophurus spinigerus*) and the blindsnake (*Anilius australis*) were also detected during the current surveys. The gecko had not previously been recorded from the project area, while the blindsnake had not been recorded during the previous two surveys of the project area (see BCE, 2020; Phoenix 2011) but has been recorded from adjacent tenure (see FaunaTrack 2018; Bamford & Wilcox 2005). Notable absences include some pygopodid lizard species (i.e. *Pletholax gracilis* and *Pygopus lepidopodus*) previously confirmed by Phoenix (2011), however these had only been recorded from Site 6 in the 2011 surveys, which is further east of the current survey area and encompasses a habitat not well represented within the current study area. The Tiger snake

(*Notechis scutatus*) and Oblong turtle (*Chelodina oblonga*), previously confirmed by Phoenix (2011) were also not detected, however these are often detected opportunistically and unfortunately were not encountered. The small fossorial snake species such as Gould's hooded snake (*Suta gouldii*) and *Brachyuophis fasciolatus fasciolatus* have also previously been recorded from close to the study area (see Cornwall 2004), however these two species have also declined considerably along the coastal plain (How & Shine, 1999).

The current survey also recorded 13 species of mammal out of a potential 16 species previously recorded in (or proximity to) the survey area (see Figure 1; Table 4). This figure equates to 100% of mammal fauna previously detected during baseline surveys (Phoenix, 2011) and 81.3% of the known mammal fauna (Table 6). While mammal species detected in the rehabilitation areas equates to 84.6% of the total mammal fauna previously detected during baseline surveys (Phoenix, 2011) and 68.8% of the known mammal fauna, achieving the minimum objective of Goal 10 in the RMP (frequency of records of native fauna species $\geq$ 50% of that recorded in the baseline survey and/or reference sites), and close to the primary objective in the RMP (frequency of records of native fauna species $\geq$ 100% of that recorded in the baseline survey and/or reference sites) (Table 6). Of the mammals detected during current surveys, five of these are insectivorous microbat species, while six are introduced species, with only two species of native, terrestrial mammal recorded, the Priority 4 Quenda (*Isoodon fusciventer*) and locally significant Common brushtail possum (*Trichosurus vulpecula*), both previously recorded by Phoenix (2011). All but one species of insectivorous bat previously recorded from the study area, the Western freetail bat (*Ozimops kitcheneri*) (Phoenix, 2011) were recorded. While an additional species, the Chocolate wattled bat (*Chalinolobus gouldii*) was recorded for the first time during the current survey.

Bird diversity was also relatively high, with 57 species recorded out of a potential 119 species previously recorded in (or proximity to) the survey area (see Figure 1; Table 5). However, although known bird diversity from within and surrounding the project area is around 119 species (see Figure 1), almost 40 of these are predominantly associated with waterways adjacent to or nearby the project area, with a figure much closer to 80 species of bush birds much more likely to occur as residents within the project area. This figure then equates to 88.7% of bush birds and 66.3% of all avifauna previously detected during baseline surveys (Phoenix, 2011) and 68.8% (bush birds) and 47.9% (all birds) of the total known avifauna (Table 6). While avifauna detected in the rehabilitation areas equates to 69.4% bush birds and 50% of all avifauna previously detected during baseline surveys (Phoenix, 2011) and 53.8% (bush birds) and 36.1% (all birds) of the total known avifauna, achieving the minimum objective of Goal 10 in the RMP (frequency of records of native fauna species $\geq$ 50% of that recorded in the baseline survey and/or reference sites) (Table 6). Avifauna recorded during the current survey included 54 species of typical bush birds, including the Endangered Carnaby's cockatoo (*Zanda latirostris*) and Vulnerable Forest red-tailed black cockatoo (*Calyptorhynchus banksii naso*), migratory Rainbow bee-eater (*Merops ornatus*) and thirteen species of local significance. Five bird species not previously recorded from the survey area were detected during current surveys, these include the Common bronzewing, Collared sparrowhawk, Square-tailed kite, and Tawny frogmouth, as well as the Chestnut-breasted mannikin, which has a known feral population in the vicinity of Bibra Lake, recorded from the Bibool management zone during the current survey.

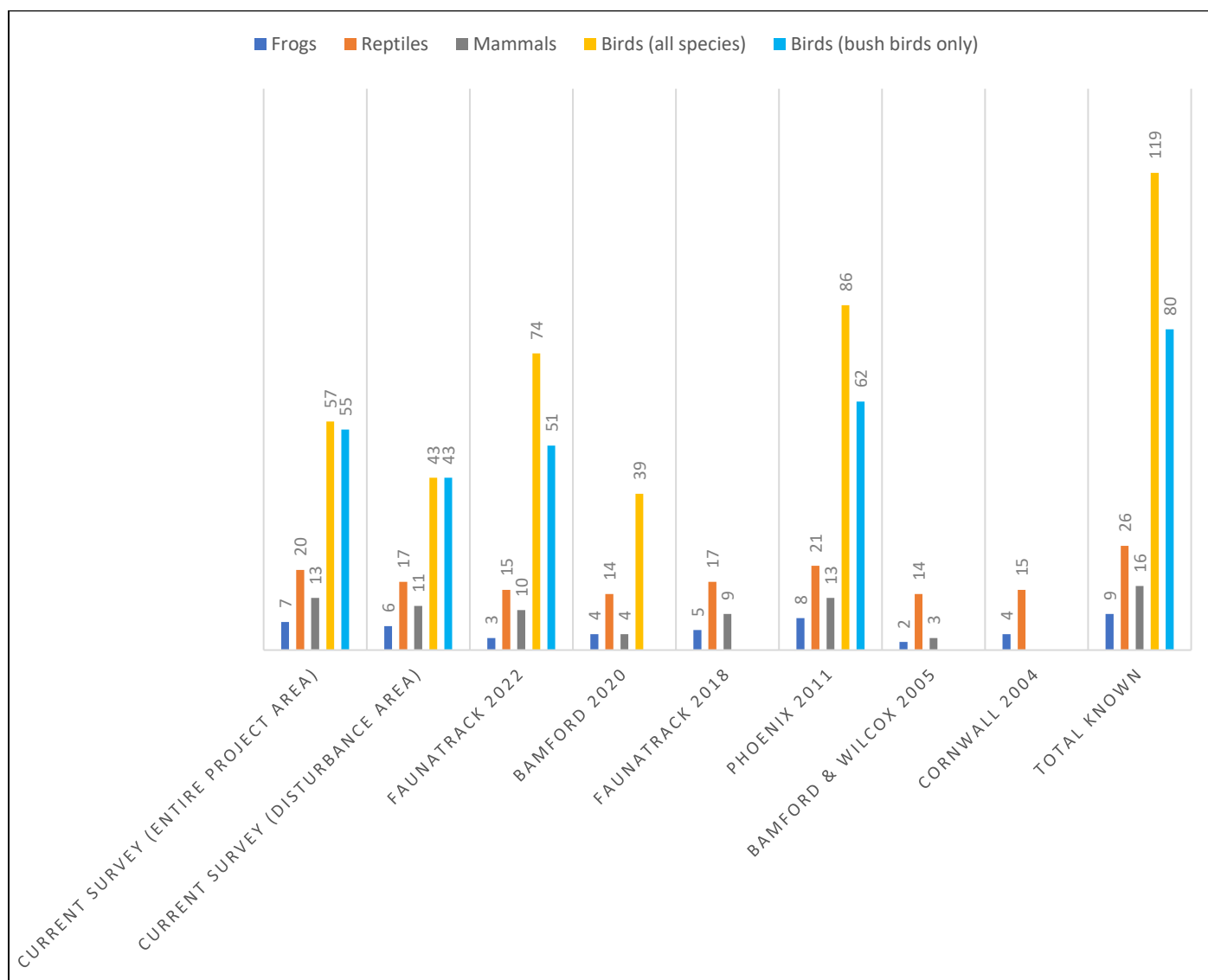


Figure 1. Total number of fauna species of each fauna group (frogs, reptiles, mammals and birds) recorded in the current survey (entire project area and disturbance/rehabilitation area) in comparison to previous surveys within and in proximity to the survey area, as well as total known species from desktop lists.

Table 6. The total fauna species recorded in the current surveys (entire project area and also just rehabilitation/disturbance areas) as a percentage of total fauna species recorded in baseline fauna surveys (Phoenix 2011) and total known species based on desktop lists.

Group	Survey	% fauna species detected during current survey	
		Entire project area	Rehabilitation area
Frogs	Phoenix 2011	87.5	75
	Total known	78	67
Reptiles	Phoenix 2011	95.2	81
	Total known	76.9	65.4
Mammals	Phoenix 2011	100	84.6
	Total known	81.3	68.8
Birds (all)	Phoenix 2011	66.3	50
	Total known	47.9	36.1
Birds (bush)	Phoenix 2011	88.7	69.4
	Total known	68.8	53.8

3.2.2 Comparisons between reference and rehabilitation areas

The following results directly relate to comparisons of fauna diversity between data collected in the current surveys in rehabilitation sites versus reference sites. With the aim of using these methods (and associated data) as a set of reference metrics/reference data to be applied to future monitoring and assessment.

3.2.2.1 Pitfall trapping

The overall survey period from October 2025 to February 2026 incorporated 1890 pitfall trapping nights (Table 7), resulting in the capture of 23 vertebrate fauna species (660 captures: 391 frogs, 265 reptiles and nine mammals; Table 8). Eighteen species from 321 captures were recorded in the reference areas, while 19 species from 339 captures were recorded in the rehabilitation areas (Table 8).

Table 7. Number of trap-nights (including dates surveyed) across all trapping transects/management zones

Management Zone	Site	Phase 1		Phase 2		Trap nights
		Date opened	Date closed	Date opened	Date closed	Pitfalls
Tuart	TR	31/10/25	7/11/25	3/2/26	10/2/26	140
	TC	31/10/25	7/11/25	3/2/26	10/2/26	140
Biyara	BR	1/11/25	8/11/25	3/2/26	10/2/26	140
	BC	1/11/25	8/11/25	3/2/26	10/2/26	140
Quenda	QR	31/10/25	7/11/25	3/2/26	10/2/26	140
	QC	31/10/25	7/11/25	3/2/26	10/2/26	140
Karak	KR	31/10/25	7/11/25	3/2/26	10/2/26	140
	KC	31/10/25	7/11/25	3/2/26	10/2/26	140
Djara	DR	1/11/25	8/11/25	3/2/26	10/2/26	140
	DC	1/11/25	8/11/25	3/2/26	10/2/26	140
Moodjar	MR	1/11/25	8/11/25	3/2/26	10/2/26	140
	MC	1/11/25	8/11/25	3/2/26	10/2/26	140
Bibool	BbR	-	-	4/2/26	11/2/26	70
	BbC	2/11/25	9/11/25	4/2/26	11/2/26	140
Total trap-nights						1890

Species richness for frogs was very similar between reference and rehabilitation sites, with two species recorded from 200 captures in the reference sites and three species from 191 captures in the rehabilitation sites. However, 99.5% of these captures were from two species: Moaning frog (358 captures) and Banjo frog (31 captures), with only two captures of the Slender tree frog within the rehabilitation site in the Bibool management zone. However, it is important to note that the reference site in the Bibool management zone was only trapped for the one season (late summer 2026) due to the wet conditions and dieback risks associated with this area during Spring 2025.

Although overall frog abundances were not too dissimilar between reference sites and rehabilitation sites, most management zones had very low capture rates, with only the far eastern management zones, Moodjar and Bibool, and to a lesser extent Djara, recording significant frog captures (Table 9). Bibool appeared to have a greater abundance of Moaning frogs in the reference plot (148 captures) versus the rehabilitation plot (121) regardless of the reference plot only being run for one season. While very similar capture rates were observed in both the Moodjar and Djara management zones. Conversely, of the four management zones that recorded Banjo frogs (Karak, Djara, Moodjar and Bibool), all but Moodjar recorded higher abundances (approximately double) in the rehabilitation areas than the reference sites, however capture numbers were low overall. No other frog species were detected during the trapping programs; however, an additional four species (*Litoria moorei*, *Crinia georgiana*, *Crinia glauerti* and *Crinia insignifera*) were detected within the project area through alternative survey methods (see sections of Frog Census and Spotlighting).

Species richness for reptiles was also very similar between reference and rehabilitation sites, with a total of 16 species recorded from 118 captures in the reference sites and 16 species from 147 captures in the rehabilitation sites (Table 9). However, three species, *Christinus marmoratus* (n=5), *Strophurus spinigerus* (n=1) and *Anilius australis* (n=2) were only captured in the reference sites, while *Acritoscincus trilineatus* (n=2), *Morethia lineocellata* (n=1) and *Pseudonaja affinis* (n=1) were only captured in the rehabilitation sites. Captures of these six species however was low and may not be a true representation of presence/absence. However, species such as the Marbled gecko (*Christinus marmoratus*) was more commonly encountered in the reference areas versus rehabilitation areas through other survey methods (i.e. Spotlighting) and it is likely that Marbled geckos are more likely to be using the reference areas due to their preference for more woodland habitats with large, mature trees and grass trees. Additional species showing a preference for the reference over rehabilitation areas include *Lerista lineata* (eight of twelve captures in reference sites) and *Menetia greyii* (19 of 31 captures in reference sites).

Several species appeared to show some preference for the rehabilitation sites over the reference sites including *Pogona minor* (13 out of 19 captures), *Ctenotus australis* (29 out of 42 captures), *Ctenotus fallens* (9 out of 11 captures) and *Tiliqua rugosa* (10 out of 14 captures). While *Morethia obscura* (34 out of 61 captures), had a slight preference for the rehabilitated sites. The two skinks: *Ctenotus australis* and *Ctenotus fallens* showed the greatest preference for rehabilitated sites. All three captures of *Ctenotus australis* in Tuart-Banksia woodland (Tuart zone) were from rehabilitation sites, as were all five captures from the Wet forest-Woodland (Bibool zone). While 15 out of 20 captures in Banksia woodland (Moodjar zone) were from rehabilitation sites, with only the Jarrah-Banksia habitats (predominantly the Djara zone) recording more captures in the reference than rehabilitation (5 versus 2). While *Ctenotus fallens* was only captured in the rehabilitated sites in Tuart-Banksia woodland (Tuart zone) and Jarrah-Banksia woodland (predominantly in the Biyara zone). *Morethia obscura* also potentially favours the rehabilitation over the reference, with Jarrah-Banksia habitats (Biyara and Quenda zones) both recording slightly higher numbers in the rehabilitation sites than the reference.

The House Mouse (*Mus musculus*) was the only species of mammal recorded during the trapping survey (Tables 8 & 9). Of the nine captures, all but one were from the reference sites, with all management zones except for Tuart-Banksia woodland (Tuart zone) and the Wet forest-Woodland habitat (Bibool zone) recording them at least once. Overall house mouse captures appeared low, however this is considered higher compared to 2020 surveys (two: BCE, 2020), but lower compared to 2010 surveys (18: Phoenix 2011).

Table 8. Percentage distribution of frog, reptile and small mammal captures across reference and rehabilitation areas.

	Species	Total captures	% rehab	% reference
Frogs	<i>Heleioporus eyrei</i>	358	47.2	52.8
	<i>Limnodynastes dorsalis</i>	31	64.5	35.5
	<i>Litoria adelaidensis</i>	2	100	0
	Frogs total	391		
Reptiles	<i>Christinus marmoratus</i>	5	0	100
	<i>Strophurus spinigerus</i>	1	0	100
	<i>Aprasia repens</i>	6	50	50
	<i>Lialis burtonis</i>	4	50	50
	<i>Pogona minor</i>	19	68	32
	<i>Acritoscincus trilineatus</i>	2	100	0
	<i>Cryptoblepharus buehneri</i>	6	50	50
	<i>Ctenotus australis</i>	42	69	31
	<i>Ctenotus fallens</i>	11	81.8	18.2
	<i>Egernia napoleonis</i>	2	50	50
	<i>Hemiergis quadrilineata</i>	25	52	48
	<i>Lerista elegans</i>	20	50	50
	<i>Lerista lineata</i>	12	33.3	66.7
	<i>Menetia greyii</i>	31	38.7	61.3
	<i>Morethia lineoocellata</i>	1	100	0
	<i>Morethia obscura</i>	61	55.7	44.3
	<i>Tiliqua rugosa</i>	14	71.4	28.6
	<i>Anilius australis</i>	2	0	100
	<i>Pseudonaja affinis</i>	1	100	0
	Reptiles total	265		
Mammals	<i>Mus musculus</i>	9	11.1	88.9
	Mammals total	9		

Table 9. Summary of ground-dwelling fauna recorded from pitfall trapping within the project area.

	Species	Trapping site														Total
		TR	TC	BR	BC	QR	QC	KR	KC	DR	DC	MR	MC	BbR	BbC	
Frogs	<i>Heleioporus eyrei</i>	-	1	-	-	-	-	-	-	7	8	34	39	148	121	358
	<i>Limnodynastes dorsalis</i>	-	-	-	-	-	-	5	9	4	8	1	-	1	3	31
	<i>Litoria adelaidensis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
	Frogs total	0	1	0	0	0	0	5	9	11	16	35	39	149	126	391
Reptiles	<i>Christinus marmoratus</i>	-	-	3	-	1	-	1	-	-	-	-	-	-	-	5
	<i>Strophurus spinigerus</i>	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1
	<i>Aprasia repens</i>	2	2	1	-	-	-	-	-	-	1	-	-	-	-	6
	<i>Lialis burtonis</i>	-	-	-	1	-	-	-	-	-	-	2	1	-	-	4
	<i>Pogona minor</i>	-	-	1	3	-	4	1	2	2	1	2	1	-	2	19
	<i>Acriscincus trilineatus</i>	-	-	-	-	-	-	-	-	-	1	-	-	-	1	2
	<i>Cryptoblepharus buehneri</i>	-	2	2	-	-	1	1	-	-	-	-	-	-	-	6
	<i>Ctenotus australis</i>	-	3	2	2	-	-	1	2	5	2	5	15	-	5	42
	<i>Ctenotus fallens</i>	-	5	-	3	2	1	-	-	-	-	-	-	-	-	11
	<i>Egernia napoleonis</i>	-	-	-	-	-	-	-	-	-	-	-	-	1	1	2
	<i>Hemiergis quadrilineata</i>	2	5	-	1	2	1	4	3	1	1	2	1	1	1	25
	<i>Lerista elegans</i>	1	2	-	-	-	-	1	2	1	-	1	-	6	6	20
	<i>Lerista lineata</i>	2	1	1	-	-	1	2	-	-	1	3	1	-	-	12
	<i>Menetia greyii</i>	9	2	-	1	1	1	5	6	1	-	3	-	-	2	31
	<i>Morethia lineocellata</i>	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1
	<i>Morethia obscura</i>	9	10	2	5	5	9	6	4	3	4	1	1	1	1	61
	<i>Tiliqua rugosa</i>	2	-	1	5	-	-	-	5	-	-	1	-	-	-	14
	<i>Anilius australis</i>	-	-	2	-	-	-	-	-	-	-	-	-	-	-	2
	<i>Pseudonaja affinis</i>	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1
	Reptiles total	28	32	15	21	11	18	22	24	13	11	20	22	9	19	265
Mammals	<i>Mus musculus</i>	-	-	-	1	2	-	2	-	2	-	2	-	-	-	9
	Mammals total	0	0	0	1	2	0	2	0	2	0	2	0	0	0	9

Based on the results of the PERMANOVA, there was no significant effect of disturbance on ground dwelling vertebrates ($p > 0.05$), however there was a strongly significant effect of habitat type on ground dwelling fauna ($p < 0.01$), (which is expected), as well as seasonal variation in ground-dwelling fauna ($p < 0.05$), with the ground fauna community changing consistently between habitats across all seasons. Any changes in the ground fauna community are consistent between disturbance types across all habitats and seasons, and there are no complex interactions between season, habitat and disturbance.

Table 10. Permutational multivariate analysis of variance (PERMANOVA) table showing the significant effect of habitat (target ecosystem) and season (survey period) on ground dwelling fauna captured through pitfall trapping surveys at systematic trapping sites within the study area, however there is no significant effect of treatment (disturbed/undisturbed habitats).

	Df	Sums of Sqs	R2	F.Model	p-value	
Habitat	4	3.426774936	0.442	3.233	0.001	**
Season	1	0.711263643	0.092	2.684	0.014	*
Treatment	1	0.215089364	0.028	0.812	0.616	
Habitat:Season	4	0.311476972	0.04	0.294	1	
Habitat:Treatment	4	0.473095878	0.061	0.446	0.996	
Season:Treatment	1	0.215601173	0.028	0.814	0.546	
Habitat:Season:Treatment	3	0.282336868	0.036	0.355	0.999	
Residual	8	2.119803194	0.273			
Total	26	7.755442028	1			

** $p \leq 0.001$, * $p \leq 0.05$

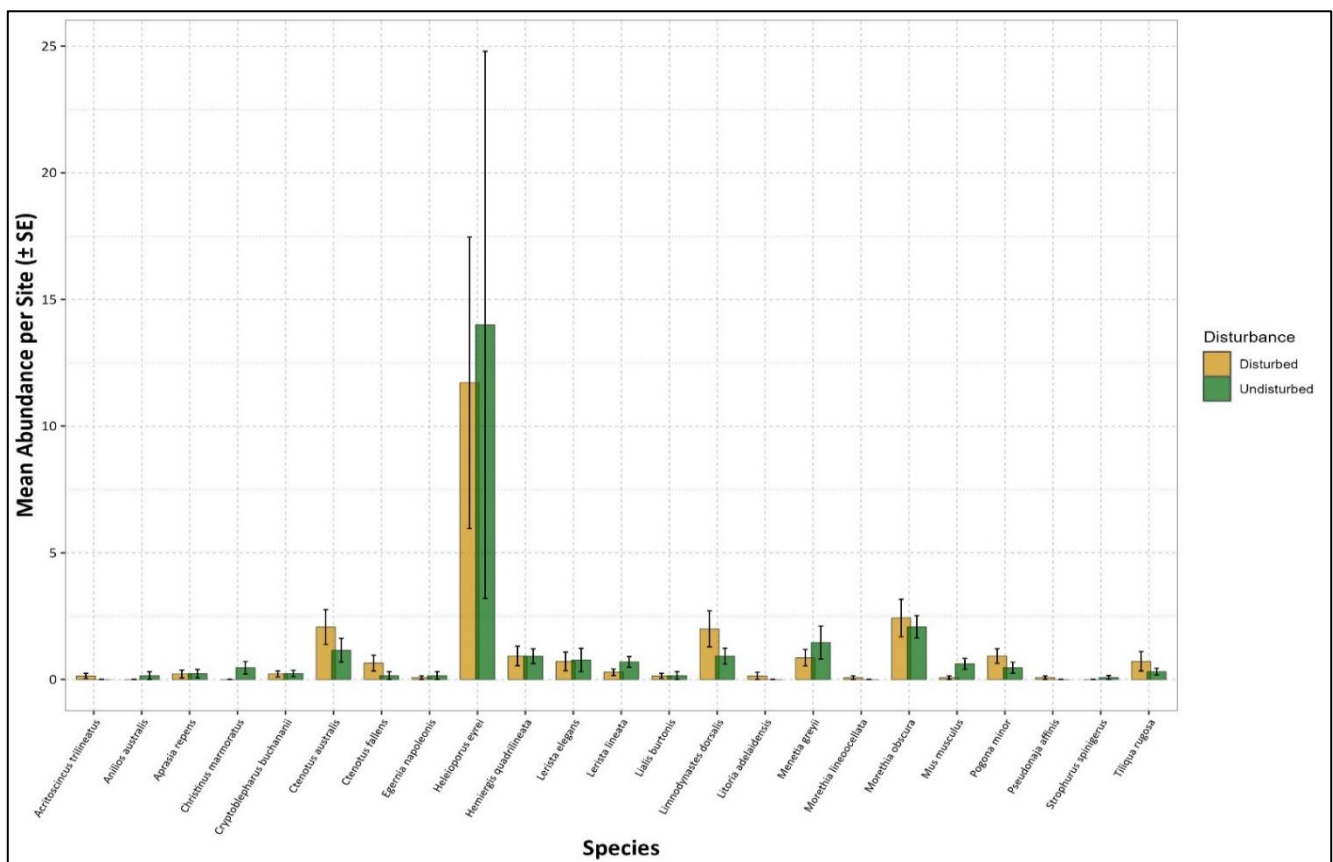


Figure 2. Mean abundance per site (± SE) of ground-dwelling vertebrates captured during systematic pitfall trapping surveys.

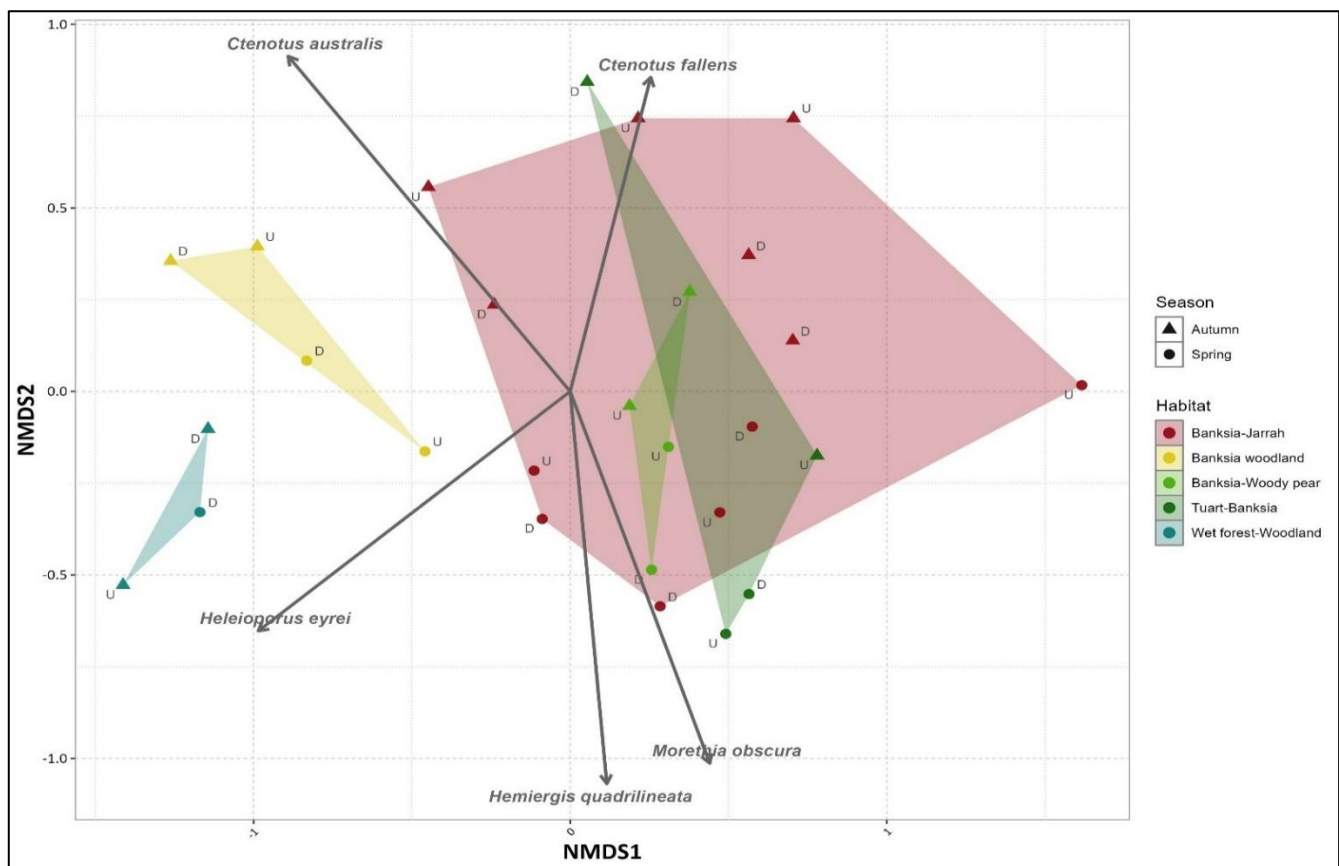


Figure 3. Non-metric multidimensional scaling (NMDS) plot showing differences in ground-dwelling vertebrate community composition between habitat (target ecosystem), season (survey period) and treatment (disturbed and undisturbed sites) along the Roe8 corridor. Each site is represented by a point on the plot. The further apart points are on the plot, the more distinct their bird communities are. The main bird species that are responsible for differences between communities when we consider habitat, season and treatment are plotted as arrows.

Although not significantly different, these results also further support results shown in percentage distribution tables that some species did exhibit a slightly higher preference for (or were observed in greater abundances) in the rehabilitated areas, however this trend was not large enough to show a significant difference between reference or rehabilitated sites.

When considering the effect of disturbance on ground-dwelling fauna throughout the study area, the species most responsible for any changes observed (in order of importance) are:

- ^*Heleioporus eyrei*
- **Morethia obscura*
- **Limnodynastes dorsalis*
- **Ctenotus australis*
- ^*Menetia greyii*
- ~*Hemiergis quadrilineata*
- **Pogona minor*, and
- **Ctenotus fallens*

^ species observed in higher abundances in reference sites

* species observed in higher abundances in rehabilitated sites

~ species with even abundances across reference and rehabilitated sites

The species observed in higher abundances in the rehabilitated sites may likely have higher tolerances to disturbance, especially areas containing higher proportions of bare ground, which was much higher in the rehabilitated areas of all management zones. Species such as *Pogona minor* also prefer dense shrub layers, which were also in greater percent cover in the rehabilitated areas of all management zones (see Vegetation results). While the species observed in higher abundances in the reference sites may require more intact habitats such as greater leaf litter cover and litter depth, and generally less disturbed environments (i.e. *Menetia greyii*). With leaf litter coverage and depth generally much greater in the reference areas of all management zones except Biyara (see Vegetation results).



Figure 4. (a) The Priority 3 Perth lined slider (*Lerista lineata*) captured within the reference site (TR) in the Tuart Management Zone; (b) The locally significant South-western crevice skink (*Egernia napoleonis*) was only captured in the Bibool Management Zone, in both reference and rehabilitation sites; (c) The Soft spiny-tailed Gecko (*Strophurus spinigerus*) was an additional reptile species for the study area, with a single capture in the reference site in the Tuart Management Zone; The Dugite (*Pseudonaja affinis*) was infrequently detected throughout the study area.

3.2.2.2 Bird census

The overall survey period from October 2025 to February 2026 incorporated 13 bird census mornings across 14 sites, resulting in the 2041 separate records of 44 species. Forty-two species were recorded from reference sites from 1176 separate observations, while 31 species from 865 separate observations were recorded in the rehabilitation areas. With a higher species richness being recorded in reference sites.

Census data outlines nine species to only occur within the reference areas, however two of these (Australian shelduck and Silver gull) were only observed as flyovers. A further six species were recorded on less than six occasions including Laughing dove (n=3), Brown goshawk (n=1), Collared sparrowhawk (n=1), Laughing kookaburra (n=1), Spotted pardalote (n=3), Varied sitella (n=3) and Grey shrike thrush (n=1). Two species however, the Striated pardalote (n=37) and Red-capped parrot (n=19) were observed numerous times, but also only in reference sites.

A further 19 species were much more commonly recorded in reference sites than rehabilitation including the federally listed Forest red-tailed black cockatoo (41 vs 16 observations) and locally significant species such as the Western wattlebird (14 vs 3 observations), Weebill (85 vs 62 observations), New holland honeyeater (164 vs 140 observations), and the Rainbow bee-eater (34 vs 23 observations). Several more commonly observed and widespread species were also observed in greater abundances within the reference areas, including Australian raven (54 vs 5), Galahs (26 vs 14), Little corella (17 vs 7), Singing honeyeater (43 vs 25), Rufous whistler (14 vs 3), Australian magpie (12 vs 5), Western gerygone (23 vs 13) and Black-faced cuckoo shrike (13 vs 5). While feral species such as the Rainbow lorikeet were also in much higher abundances in the reference than rehabilitation (236 vs 108).

Conversely, only two species, the White-faced heron (recorded as a brief flyover only in Moodjar) and Crested pigeon (recorded on a single occasion in Quenda) were the only species to just be recorded in rehabilitated sites during the bird census. While only a further eight bird species presented in higher abundances in the rehabilitated sites than the reference areas. This included species such as the federally listed Carnaby's cockatoo (42 vs 1), locally significant species such as Common bronzewing (6 vs 2), Splendid fairy-wren (102 vs 30) and White-browed scrub-wren (19 vs 11) and White-cheeked honeyeater (11 vs 7). While the common and widespread Brown honeyeater was also slightly more abundant in the rehabilitation site (109 vs 91), as with the introduced Spotted dove (4 vs 1).

Table 11. Percentage distribution of bird census observations across reference and rehabilitation areas.

Species	Total observations	% rehab	% reference
Australian shelduck	5	0	100
Silver gull	1	0	100
White-faced heron	1	100	0
Spotted dove	5	80	20
Laughing dove	3	0	100
Common bronzewing	8	75	25
Crested pigeon	1	100	0
Australian white ibis	2	50	50
Brown goshawk	1	0	100
Collared sparrowhawk	1	0	100
Whistling kite	2	50	50
Rainbow bee-eater	57	43.4	59.6
Laughing kookaburra	1	0	100
Tawny frogmouth	6	0	100
Galah	40	35	65
Little corella	24	29.2	70.8
Carnaby's cockatoo	43	97.7	2.3
Forest red-tailed black cockatoo	57	29.1	71.9
Red-capped parrot	19	0	100
Rainbow lorikeet	344	31.4	68.6
Splendid fairy-wren	132	77.3	22.7
Red wattlebird	106	25.5	74.5
Western wattlebird	17	17.7	82.3
Singing honeyeater	68	36.8	63.2
Brown honeyeater	200	54.5	45.5
New holland honeyeater	304	46.1	53.9
White-cheeked honeyeater	18	61.1	38.9
Spotted pardalote	3	0	100
Striated pardalote	37	0	100
Mistletoebird	3	66.7	33.3
Western gerygone	36	36.1	63.9
White-browed scrub-wren	30	63.3	36.7
Weebill	147	42.2	57.8
Varied sitella	3	0	100
Black-faced cuckoo-shrike	18	27.8	72.2
Grey shrike-thrush	1	0	100
Rufous whistler	17	17.6	82.4
Australian magpie	17	29.4	70.6
Grey butcherbird	3	33.3	66.7
Grey fantail	12	41.7	58.3
Willy wagtail	11	27.3	72.7
Australian raven	59	91.5	8.5
Tree martin	10	50	50
Silvereye	168	57.1	42.9
Birds total	2041		

Table 12. Summary of bird census records within the project area.

Species	Census site														Total
	TR	TC	BR	BC	QR	QC	KR	KC	DR	DC	MR	MC	BbR	BbC	
Australian shelduck	-	-	-	-	-	-	5	-	-	-	-	-	-	-	5
Silver gull	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1
White-faced heron	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1
Spotted dove	-	1	1	-	-	1	-	-	-	2	-	-	-	-	5
Laughing dove	-	-	3	-	-	-	-	-	-	-	-	-	-	-	3
Common bronzewing	-	-	2	-	-	2	-	1	-	2	-	1	-	-	8
Crested pigeon	-	-	-	-	-	1	-	-	-	-	-	-	-	-	1
Australian white ibis	1	1	-	-	-	-	-	-	-	-	-	-	-	-	2
Brown goshawk	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1
Collared sparrowhawk	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1
Whistling kite	-	-	-	-	-	-	-	-	-	-	1	-	-	1	2
Rainbow bee-eater	12	-	1	3	1	-	1	-	7	-	10	20	2	-	57
Laughing kookaburra	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1
Tawny frogmouth	-	-	-	-	-	-	6	-	-	-	-	-	-	-	6
Galah	9	3	1	4	14	6	-	-	2	1	-	-	-	-	40
Little corella	6	4	4	2	5	1	-	-	2	-	-	-	-	-	24
Carnaby's cockatoo	-	42	-	-	1	-	-	-	-	-	-	-	-	-	43
Forest red-tailed black cockatoo	4	5	16	-	-	6	16	4	3	1	2	-	-	-	57
Red-capped parrot	-	-	-	-	-	-	4	-	4	-	8	-	3	-	19
Rainbow lorikeet	52	20	24	15	63	24	34	19	18	21	34	5	11	4	344
Splendid fairy-wren	-	-	-	-	-	7	-	-	4	20	12	65	14	10	132
Red wattlebird	19	3	12	4	11	12	25	5	9	3	2	-	1	-	106
Western wattlebird	-	-	-	-	2	-	-	-	-	1	12	-	-	2	17
Singing honeyeater	6	4	14	7	8	5	7	3	6	6	2	-	-	-	68
Brown honeyeater	22	13	21	34	12	3	11	9	11	50	14	-	-	-	200
New holland honeyeater	7	-	16	14	7	1	1	-	6	60	42	20	85	45	304
White-cheeked honeyeater	7	7	-	-	-	-	-	-	-	4	-	-	-	-	18
Spotted pardalote	-	-	-	-	-	-	-	-	-	-	-	-	3	-	3
Striated pardalote	10	-	4	-	4	-	1	-	3	-	8	-	7	-	37
Mistletoebird	-	-	1	1	-	-	-	1	-	-	-	-	-	-	3
Western gerygone	-	-	-	-	-	-	1	-	21	8	-	-	1	5	36
White-browed scrub-wren	-	-	-	-	-	-	-	-	1	4	7	11	3	4	30
Weebill	14	8	11	16	20	14	19	13	9	11	2	-	10	-	147
Varied sitella	-	-	-	-	-	-	-	-	-	-	-	-	3	-	3
Black-faced cuckoo-shrike	2	1	5	2	-	-	-	-	1	2	5	-	-	-	18
Grey shrike-thrush	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1
Rufous whistler	-	-	3	-	-	-	-	-	2	-	8	-	1	3	17
Australian magpie	6	4	-	-	-	-	6	1	-	-	-	-	-	-	17
Grey butcherbird	-	-	1	-	-	-	-	1	1	-	-	-	-	-	3
Grey fantail	-	-	-	-	-	-	-	-	-	-	4	-	3	5	12
Willy wagtail	1	-	1	1	1	1	4	-	-	-	-	-	1	1	11
Australian raven	14	-	14	-	6	2	5	1	12	-	2	2	1	-	59
Tree martin	2	-	-	-	-	-	-	-	-	2	2	-	1	3	10
Silvereye	7	3	9	40		6	1	3	20	18	14	12	21	14	168
Birds total	201	119	164	143	157	92	149	61	142	216	192	137	171	97	2041

Based on the results of the PERMANOVA, there was a significant effect of disturbance on birds ($p < 0.05$). As expected, there is also a strongly significant effect of habitat type on birds ($p < 0.01$) as well as seasonal variation in ground-dwelling fauna ($p \leq 0.01$), with the bird community changing consistently between habitats across all seasons. Any changes in the bird community are consistent between disturbance types across all habitats and seasons, and there are no complex interactions between season, habitat and disturbance.

Table 13. Permutational multivariate analysis of variance (PERMANOVA) table showing the significant effect of treatment (disturbed/undisturbed habitat), habitat (target ecosystem) and season (survey period) on bird communities surveyed via bird census at systematic survey sites within the study area.

	Df	Sums of Sqs	R2	F.Model	p-value	
Habitat	4	2.096536873	0.359	3.533	0.001	**
Season	1	0.44914432	0.077	3.027	0.01	*
Treatment	1	0.434899054	0.075	2.931	0.012	*
Habitat:Season	4	0.792254771	0.136	1.335	0.169	
Habitat:Treatment	4	0.502930544	0.086	0.847	0.674	
Season:Treatment	1	0.098308023	0.017	0.663	0.705	
Habitat:Season:Treatment	3	0.274006206	0.047	0.616	0.911	
Residual	8	1.186861802	0.203			
Total	26	5.834941592	1			

** $p \leq 0.001$, * $p \leq 0.05$

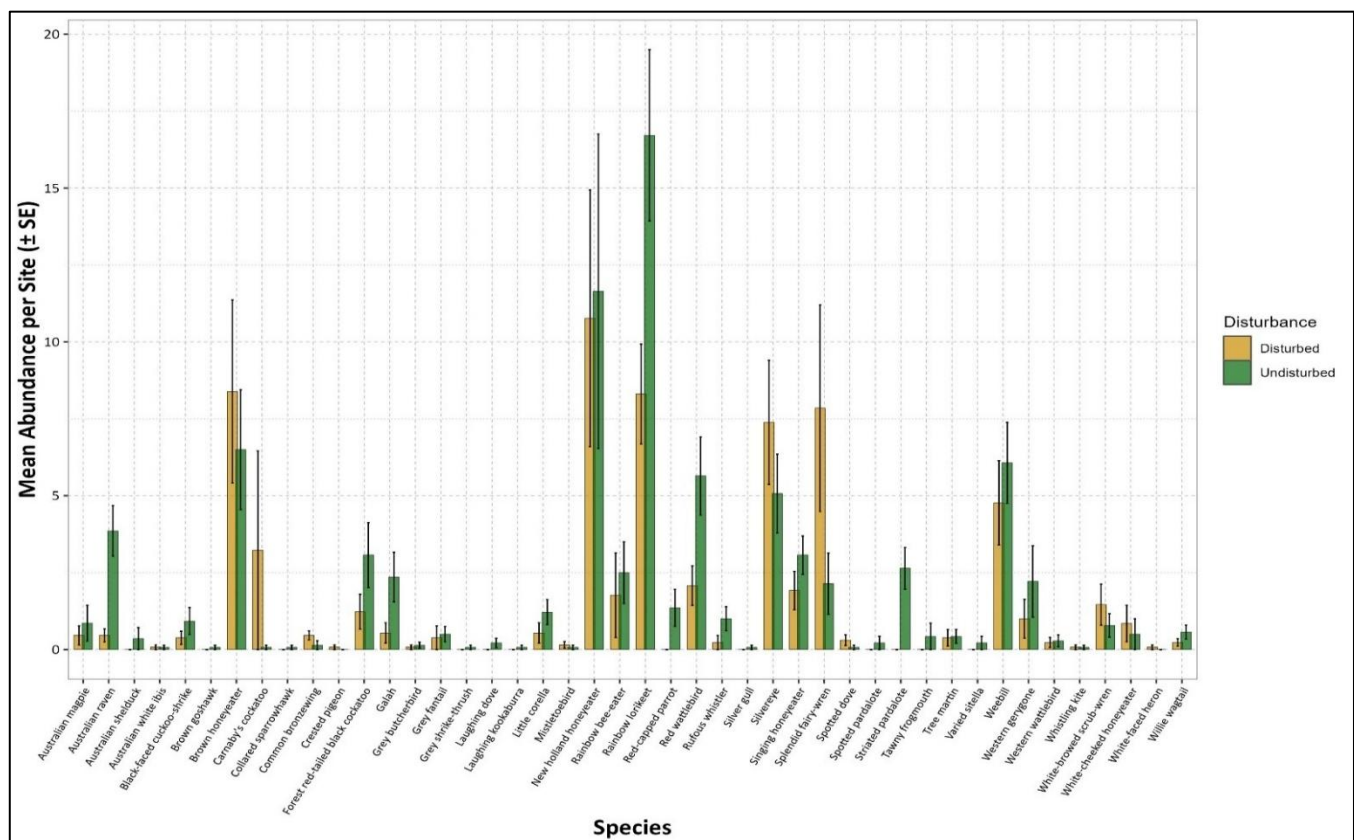


Figure 5. Mean abundance per site ($\pm$ SE) of birds observed during systematic bird census.

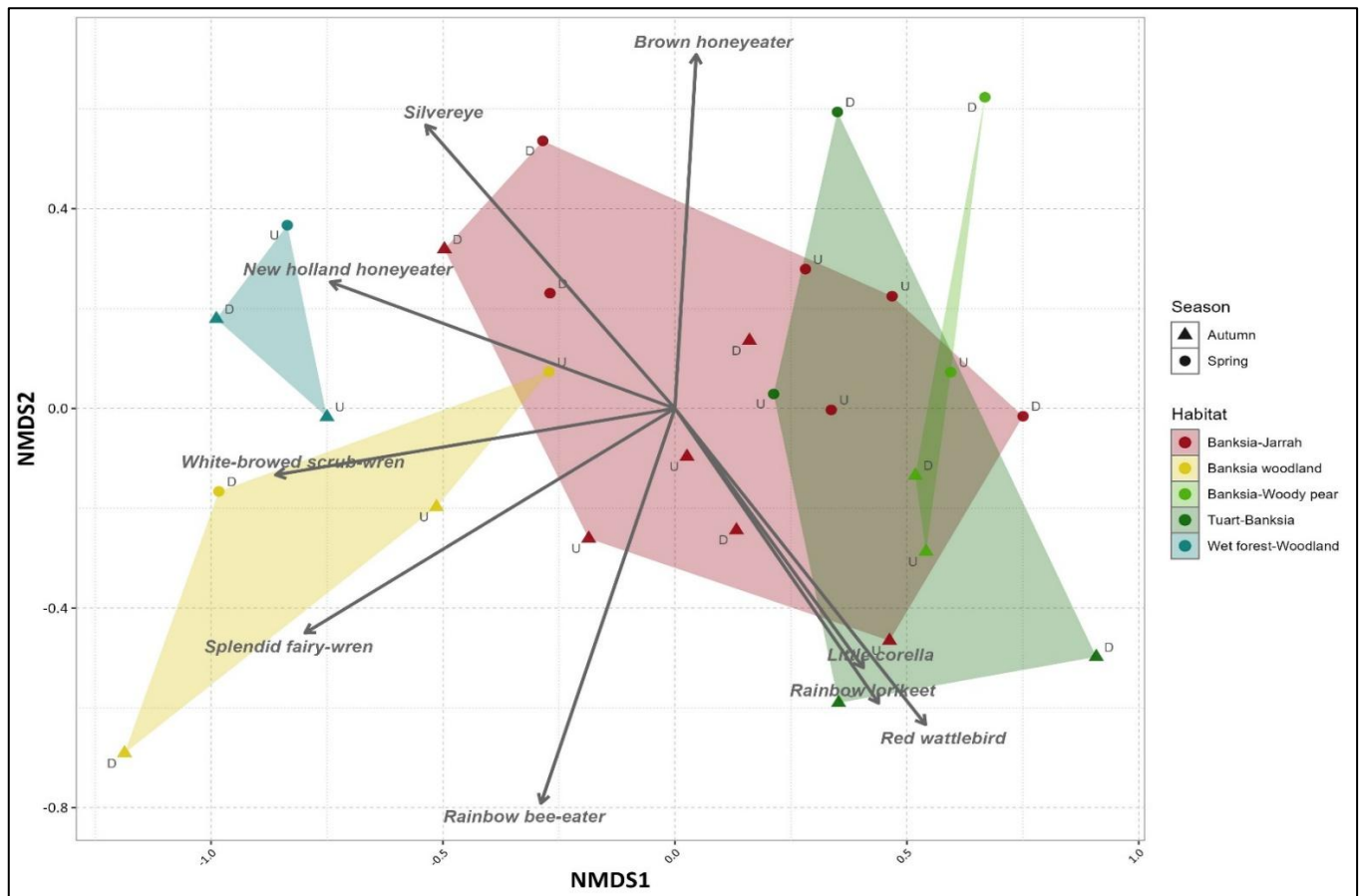


Figure 6. Non-metric multidimensional scaling (NMDS) plot showing differences in bird community composition between habitat (target ecosystem), season (survey period) and treatment (disturbed and undisturbed sites) along the Roe8 corridor. Each site is represented by a point on the plot. The further apart points are on the plot, the more distinct their bird communities are. The main bird species that are responsible for differences between communities when we consider habitat, season and treatment are plotted as arrows.

These, statistically significant, results also further support results shown in percentage distribution tables that some species did exhibit a slightly higher preference for (or were observed in greater abundances) in the rehabilitated areas.

When considering the effect of disturbance on bird communities throughout the study area, the species most responsible for any changes observed (in order of importance) are:

- ~New holland honeyeater
- ^Rainbow lorikeet
- *Brown honeyeater
- *Splendid fairy-wren
- *Silvereye
- ^Weebill
- ^Red wattlebird
- ^Australian raven
- ^Rainbow bee-eater
- *White-browed scrub-wren, and
- ^Little corella

^ species observed in higher abundances in reference sites

* species observed in higher abundances in rehabilitated sites

~ species with even abundances across reference and rehabilitated sites

The species observed in higher abundances in the rehabilitated sites may likely tolerate disturbance to some level, however, several of these species such as Splendid fairy-wren and White-browed scrub-wren prefer dense shrub layers, which were also in greater percent cover in the rehabilitated areas of all management zones (see Vegetation results). While the species observed in higher abundances in the reference sites may require more intact habitats such as the occurrence and/or greater proportions of large, mature trees which are more numerous in the reference areas of all management zones (see Vegetation results).

3.2.2.3 Quenda foraging transects

The overall survey period from October 2025 to February 2026 incorporated the recording of quenda digging observations along 12 x 50 metre transects within six of the eight management zones. With transects located in both reference and rehabilitated areas and covering 600 metres in total length and 1200 square metres in area.

Quenda diggings were recorded along seven of the 12 transects, this included five in reference sites and two in rehabilitation sites. Diggings recorded during the current survey were considerably higher than recorded during the 2019/20 surveys (total 264 diggings vs 14 in 2020; see BCE, 2020). However, 142 (over half of the recorded diggings) were from transects within the Tuart and Biyara management zones which were not surveyed during the 2020 surveys.

Quenda diggings were considerably higher across reference areas as opposed to rehabilitated areas throughout the entire study area (Figure 7), with Quenda diggings being observed in five out of six management zones (Figure 8). Tuart and Quenda management zones recorded Quenda diggings in both the reference and rehabilitation sites, however there were generally much more diggings observed in the reference than the rehabilitation areas (Tuart: 86 vs 27; Quenda: 46 vs 21). While the Biyara, Djara and Bibool management zones only recorded signs of Quenda within the reference sites, with the Karak management zone failing to detect Quenda on either transect.

Based on the results of this survey, Quenda are present throughout much of the corridor alignment, with foraging abundances considerably higher than previous surveys, suggesting a much higher level of foraging activity, which potentially relates to a higher abundance of Quenda. Although no Quenda diggings were observed within the woody pear habitat in Karak, Quenda were detected on motion cameras within the eastern parts of the Karak management zone during the current surveys (see Motion camera section) and previous surveys (see Appendix 8; BCE, 2020).

Results of vegetation assessments suggest a much higher percentage of bare ground in rehabilitated sites, particularly in zones such as Karak and Djara, where Quenda were either absent completely or infrequently recorded. High percentages of bare ground were also present in the Moodjar management zone, however, transects were not undertaken here due to the presence of an exclusion fence, however it is likely that Quenda diggings may also be low in the rehabilitated sites in this area without the presence of an exclusion fence.

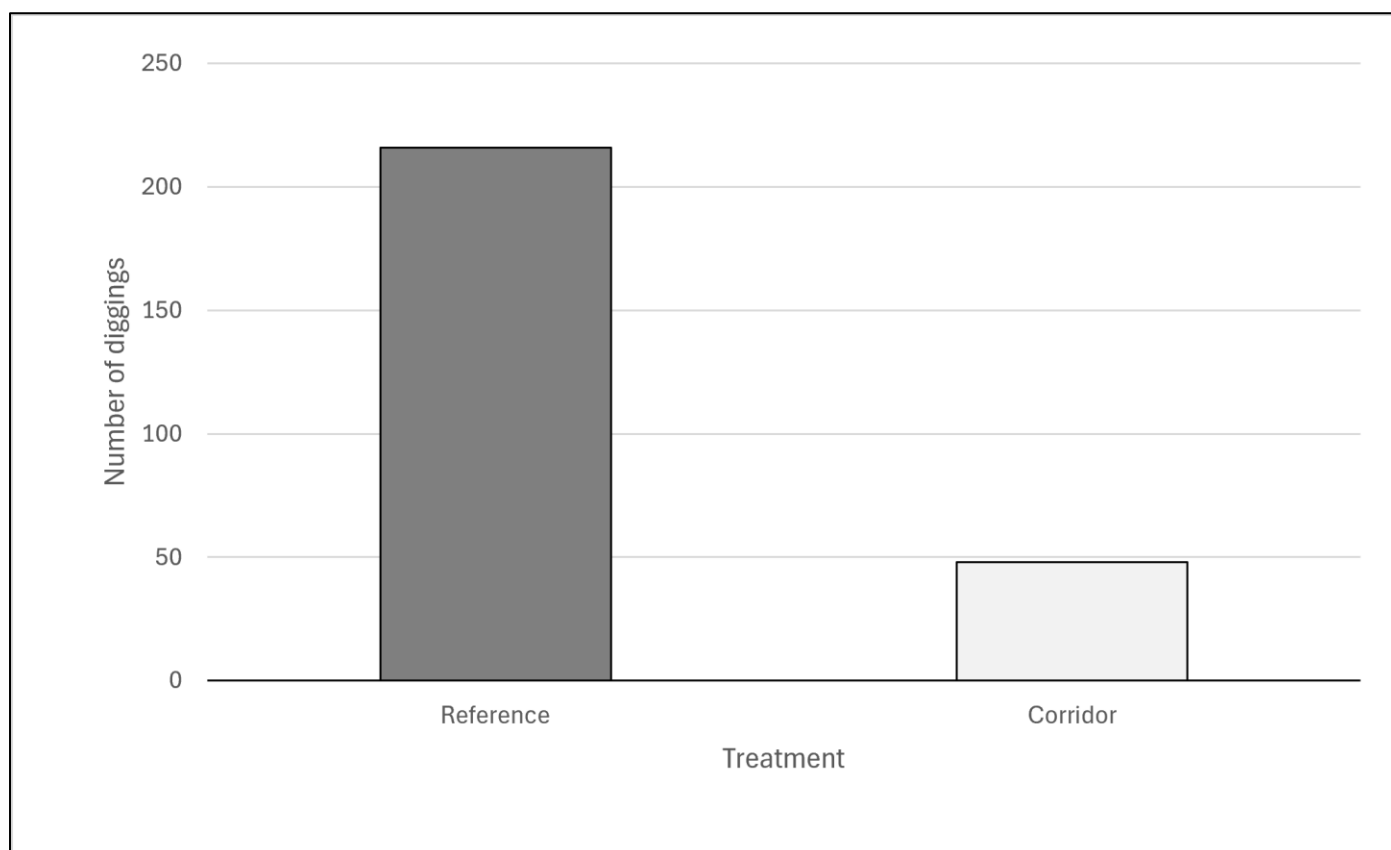


Figure 7: The combined total number of Quenda diggings recorded in reference and rehabilitated transects across the entire study area.

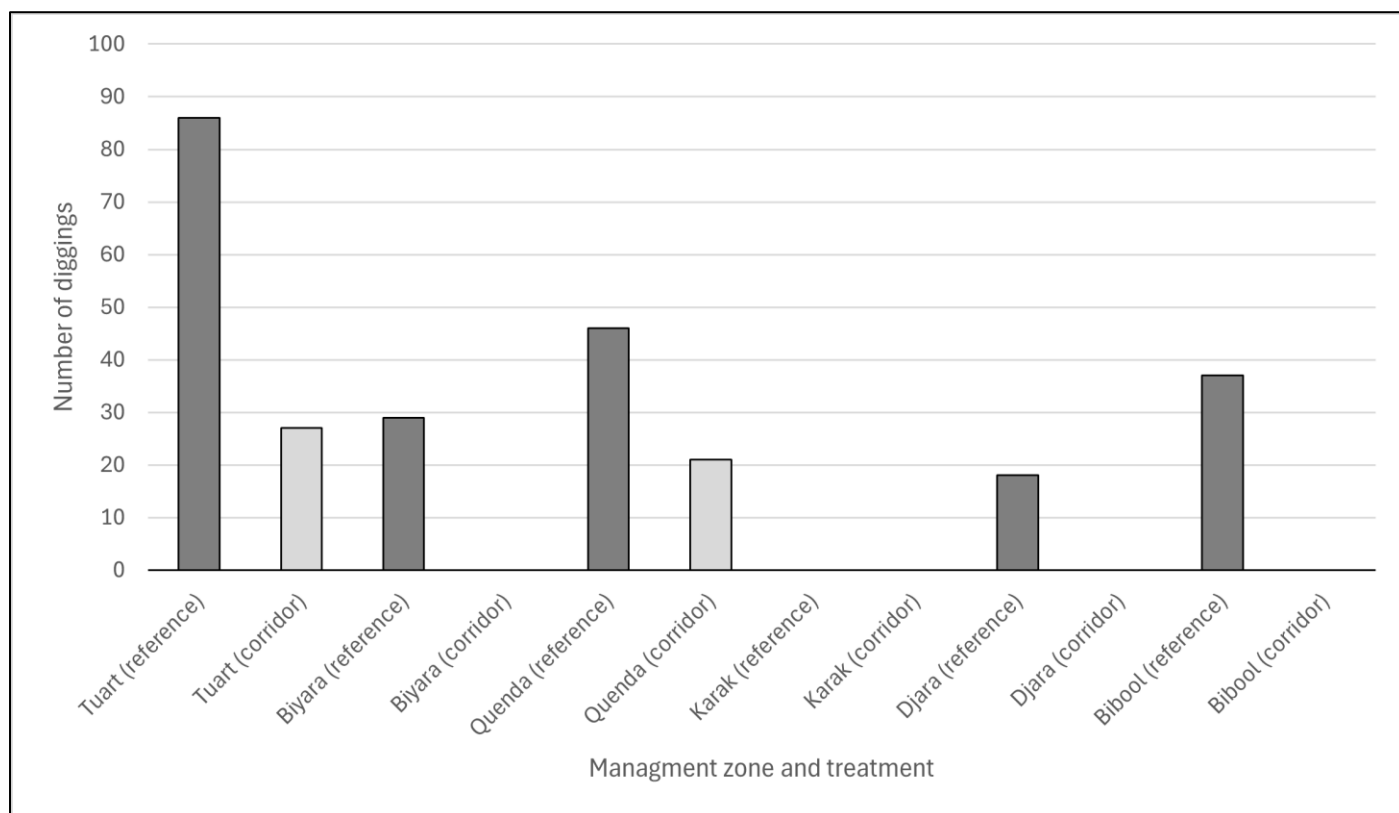


Figure 8: The total number of Quenda diggings recorded in reference and rehabilitated transects in each management zone sampled.

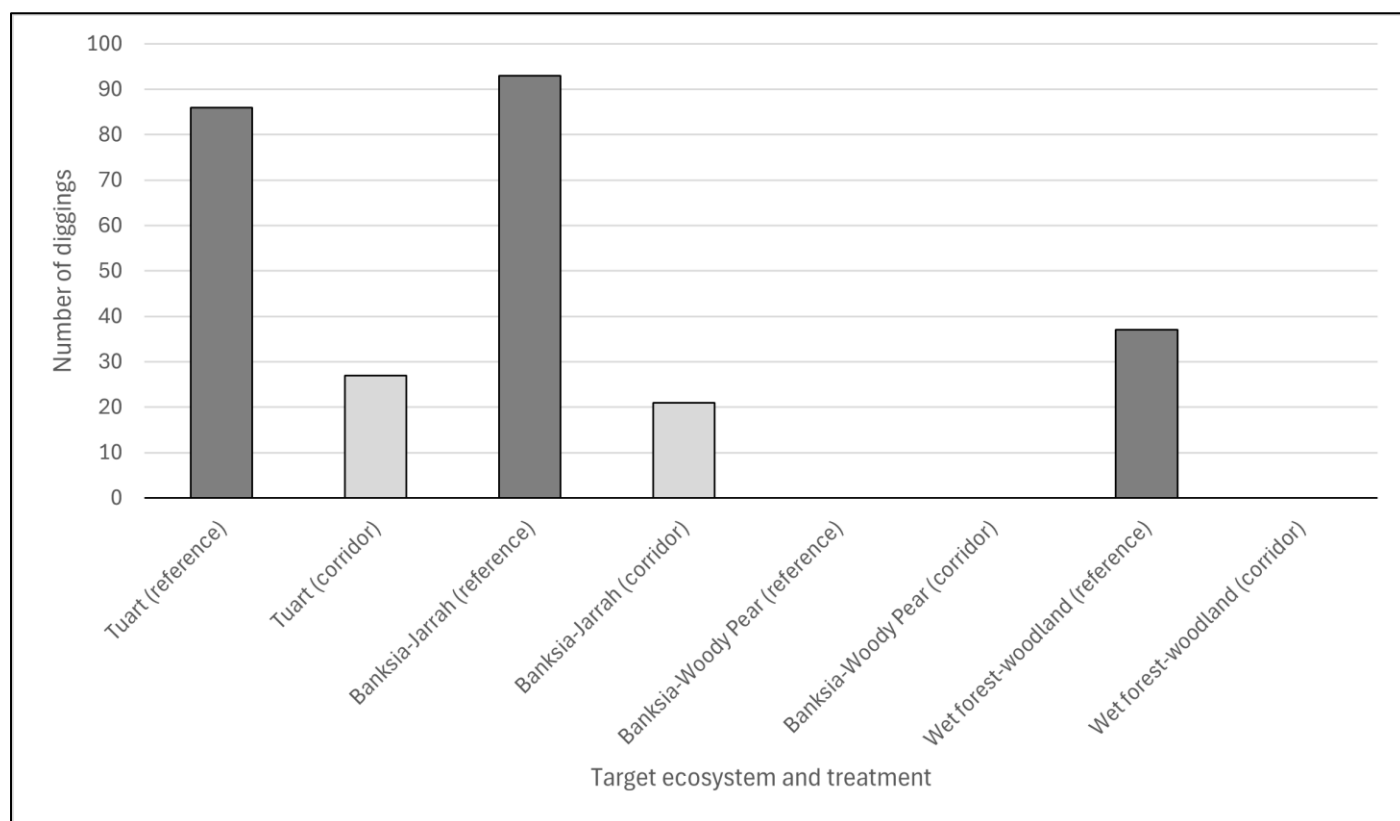


Figure 9: The total number of Quenda diggings recorded in reference and rehabilitated transects across each target ecosystem sampled.

3.2.2.4 Motion-sensor cameras

The overall camera trapping survey period from 4th to 11th November 2025 and 12th to 19th February 2026 incorporated a total of 39 cameras left in-situ for seven consecutive nights, equating to a total of 273 camera trapping nights. Twenty-one fauna species were detected during motion camera surveys, seven which are introduced (including stray/domestic cats, foxes and pet dogs). This included eleven species recorded during Spring 2025 surveys and 17 during late Summer/Autumn surveys in 2026.

Similarly to previous surveys (see BCE, 2020), the Bobtail lizard (*Tiliqua rugosa*) was the most readily detected and widespread species, recorded on 10 out of 19 cameras in 2025 and seven out of 20 cameras in 2026, with much higher detection rates in the rehabilitated areas. However, Quenda were potentially more readily detected and widespread overall, recorded on 8 of 19 cameras in 2025, and from 12 of 20 cameras in 2026, with much higher detections in the reference areas compared to rehabilitated areas. Motion cameras also detected Quenda in all management zones except Karak (similar results to foraging surveys). Quenda were detected in the reference areas in the remaining six management zones and were only absent from the rehabilitation area of Djara.

Introduced species were also widely distributed and abundant from motion camera detections, with seven cameras detecting cats (including multiple individuals) during 2025, however only two cameras recorded cats in 2026. Three cameras recorded foxes in 2025 and a further two cameras in 2026. While rabbits were only detected on two cameras in both 2025 and 2026, with three of the four detections within the rehabilitated areas of the Bibool management zone. While the Black rat was only detected within the reference areas in Bibool.

Overall, Quenda abundances (based on independent detections) were substantially higher in reference sites, which is consistent with foraging survey results, with site vegetation characteristics likely contributing to these results. In addition, the Brushtail possum was only recorded in reference sites, which is also likely a reflection of the vegetation characteristics of reference sites (i.e. presence of large, mature trees). While cats appeared to favour rehabilitated sites.

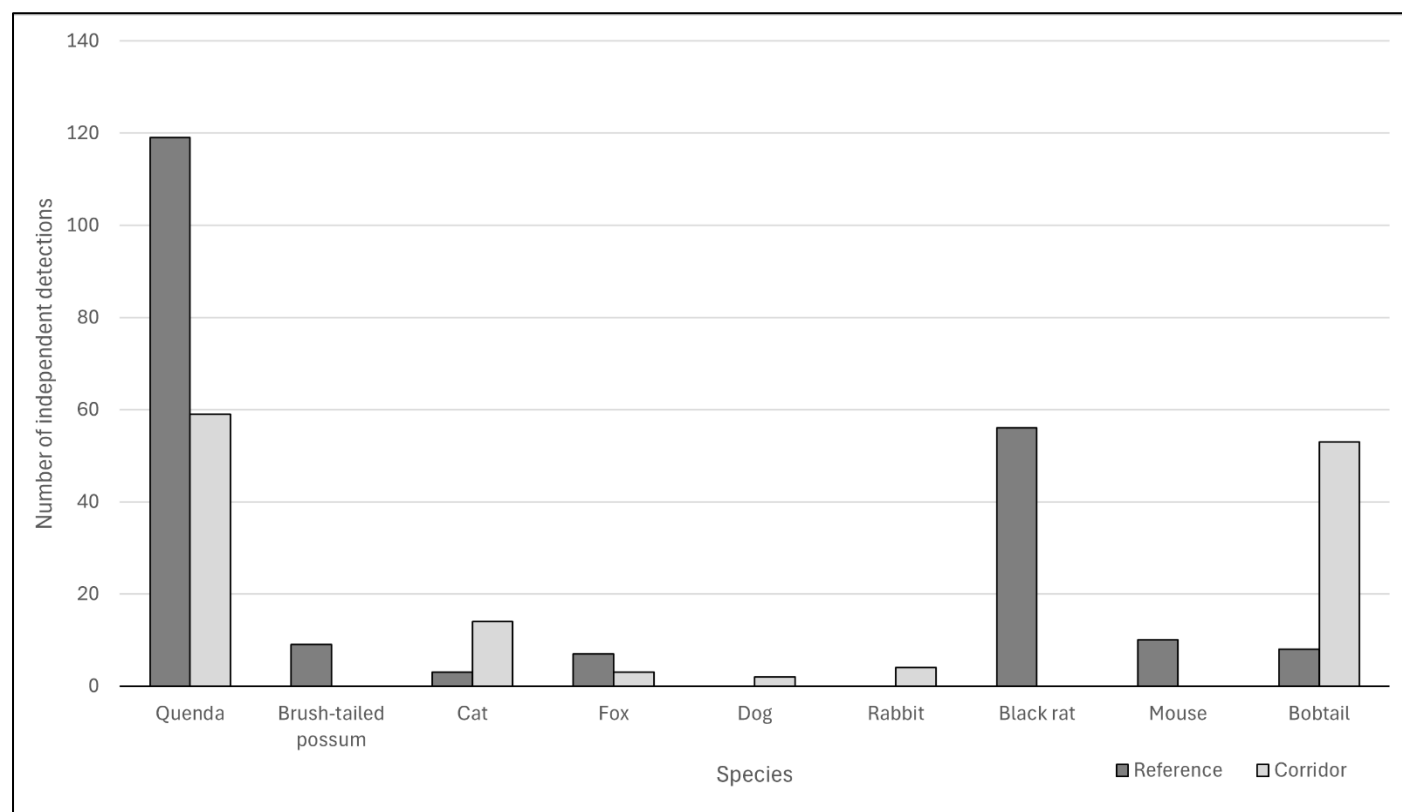


Figure 10: The total number of independent detections of important/detectable fauna species across all motion camera locations.

Table 14: Number of independent detections of each species recorded on motion cameras in reference and rehabilitated sites during both survey periods, including overall number of independent detections.

Species		2025		2026		Total	
		Reference	Rehabilitated	Reference	Rehabilitated	Reference	Rehabilitated
Quenda	<i>Isodon fusciventer</i>	41	24	78	35	119	59
Brush-tailed possum	<i>Trichosurus vulpecula</i>			9		9	0
Cat	<i>Felis catus</i>	2	9	1	5	3	14
Fox	<i>Vulpes vulpes</i>	5	1	2	2	7	3
Dog	<i>Canis familiaris</i>		1		1	0	2
Rabbit	<i>Oryctolagus cuniculus</i>		2		2	0	4
Black rat	<i>Rattus rattus</i>	8		48		56	0
Mouse	<i>Mus musculus</i>	4		6		10	0
Bobtail	<i>Tiliqua rugosa</i>	1	39	7	14	8	53
Crevice skink	<i>Egernia napoleonis</i>			1		1	0
Dugite	<i>Pseudonaja affinis</i>			1		1	0
Limestone Ctenotus	<i>Ctenotus australis</i>		1			0	1
	<i>Ctenotus fallens</i>		1			0	1
	<i>Cryptoblepharus buehnanii</i>				1	0	1
Australian magpie			3		1	0	4
Brown goshawk				1		1	0
Common bronzewing					2	0	2
Grey butcherbird					2	0	2
Splendid fairy-wren			1			0	1
Spotted dove					1	0	1
White-browed scrub-wren					1	0	1



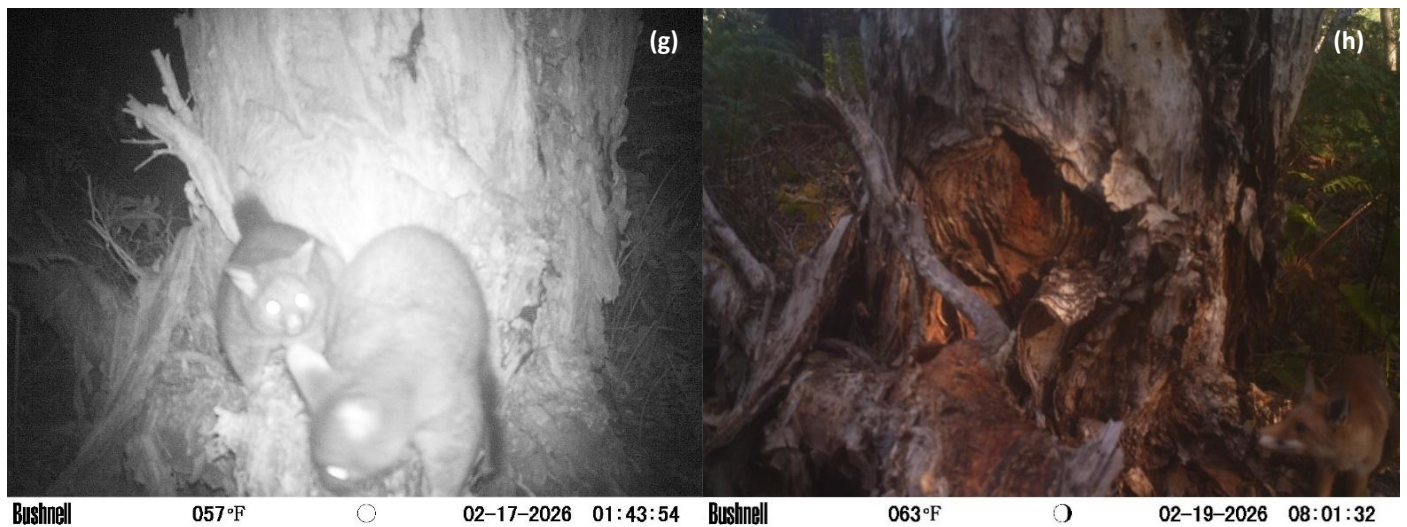


Figure 11: (a & b) Two individual cats captured on Camera #14 in the rehabilitation sites (KC) in the Karak management zone; A fox (c), cat (d), Quenda (e) and Rabbit (f) all captured on Camera #FT3 in the rehabilitation site (QC) in the Quenda management zone; Two brushtail possums (g) and a fox (h) captured on Camera #FC6 in reference habitat in the Bibool management zone.

Table 15: Location, treatment, deployment date and number of camera trap nights across both survey seasons.

	Management zone	Treatment	Camera #	Latitude	Longitude	Date deployed	Date collected	Nights
Phase 1 (Spring 2025)	Tuart	Reference	FB8	-32.090582	115.79615	4/11/2025	11/11/2025	7
	Biyara	Rehabilitation	FD3	-32.087498	115.798782	4/11/2025	11/11/2025	7
	Quenda	Reference	FC4	-32.088837	115.799385	4/11/2025	11/11/2025	7
	Quenda	Rehabilitation	FC2	-32.089438	115.803692	4/11/2025	11/11/2025	7
	Karak	Rehabilitation	FA7	-32.088293	115.809468	4/11/2025	11/11/2025	7
	Djara	Reference	FD1	-32.086048	115.819017	4/11/2025	11/11/2025	7
	Tuart	Rehabilitation	FA1	-32.089327	115.79648	4/11/2025	11/11/2025	7
	Biyara	Reference	FD6	-32.086955	115.799202	4/11/2025	11/11/2025	7
	Karak	Rehabilitation	FB3	-32.08613	115.815853	4/11/2025	11/11/2025	7
	Karak	Reference	FC7	-32.08831	115.810415	4/11/2025	11/11/2025	7
	Karak	Reference	FC3	-32.085775	115.815463	4/11/2025	11/11/2025	7
	Djara	Rehabilitation	FC6	-32.085168	115.819072	4/11/2025	11/11/2025	7
	Moodjar	Reference	FB9	-32.082338	115.830413	4/11/2025	11/11/2025	7
	Moodjar	Rehabilitation	FA2	-32.082888	115.830643	4/11/2025	11/11/2025	7
	Moodjar	Reference	FA8	-32.083322	115.830908	4/11/2025	11/11/2025	7
	Bibool	Reference	FC8	-32.081817	115.835782	4/11/2025	11/11/2025	7
	Bibool	Rehabilitation	FA10	-32.082245	115.835543	4/11/2025	11/11/2025	7
	Bibool	Rehabilitation	FB2	-32.082802	115.836623	4/11/2025	11/11/2025	7
	Bibool	Reference	FD2	-32.083523	115.836483	4/11/2025	11/11/2025	7
Total								133
Phase 2 (Autumn 2026)	Tuart	Reference	FT1	-32.090547	115.796172	12/02/2025	19/02/2025	7
	Biyara	Rehabilitation	95	-32.087498	115.798782	12/02/2025	19/02/2025	7
	Quenda	Reference	78	-32.088837	115.799385	12/02/2025	19/02/2025	7
	Quenda	Rehabilitation	FT3	-32.089438	115.803692	12/02/2025	19/02/2025	7
	Karak	Rehabilitation	14	-32.088293	115.809468	12/02/2025	19/02/2025	7
	Djara	Reference	681	-32.086048	115.819017	12/02/2025	19/02/2025	7
	Tuart	Rehabilitation	FT4	-32.089327	115.79648	12/02/2025	19/02/2025	7
	Biyara	Reference	120	-32.086955	115.799202	12/02/2025	19/02/2025	7
	Karak	Rehabilitation	481	-32.086215	115.815852	12/02/2025	19/02/2025	7
	Karak	Reference	77	-32.08831	115.810415	12/02/2025	19/02/2025	7
	Karak	Reference	778	-32.085775	115.815463	12/02/2025	19/02/2025	7
	Djara	Rehabilitation	BHD	-32.085168	115.819072	12/02/2025	19/02/2025	7
	Moodjar	Reference	81	-32.082338	115.830413	12/02/2025	19/02/2025	7
	Moodjar	Rehabilitation	FT5	-32.082818	115.830823	12/02/2025	19/02/2025	7
	Moodjar	Reference	1	-32.083322	115.830908	12/02/2025	19/02/2025	7
	Bibool	Reference	602	-32.081608	115.835468	12/02/2025	19/02/2025	7
	Bibool	Rehabilitation	291	-32.082245	115.835547	12/02/2025	19/02/2025	7
	Bibool	Rehabilitation	127	-32.082782	115.836637	12/02/2025	19/02/2025	7
	Bibool	Reference	659	-32.083262	115.835733	12/02/2025	19/02/2025	7
	Bibool	Reference	fc6	-32.082227	115.832832	12/02/2025	19/02/2025	7
Total								140

3.2.2.5 Vegetation assessments

Twelve of the 14 trapping sites contained a vegetation monitoring plot within or in proximity to a fauna trapping site. Consequently, an additional two vegetation plots were established and assessed during the current surveys. These included a reference plot within the Quenda management zone (FT01), as no vegetation plots had previously been established in this area, while an additional reference plot was established within Karak management zone (FT02), as the closest existing vegetation plot (ROE34), is located outside of the Banksia-Woody pear woodland target ecosystem (located in Banksia-Jarrah woodland) and was considered unsuitable as a comparison site.



A visual analysis of dominant vegetation cover and ground cover across vegetation plots outlined some key structural differences between reference and rehabilitation sites, which may help to explain the fauna assemblages and abundances observed between sites.

Overall, there is a much higher cover/presence of large, mature trees within reference plots, which are lacking in rehabilitation plots. Specific species include Eucalypts (*E. gomphocephala* and *E. marginata*), Sheoaks (*Allocasuarina fraseriana*), Banksias (*B. attenuata*, *ilicifolia* and *menziesii*) and grasstrees (*Xanthorrhoea preissii*). Leaf litter coverage and depth is also greater in reference areas than rehabilitation sites. While rehabilitated areas appear to have greater areas of bare ground and are more dominant upper shrub layer, with shrubs such as *Acacia* spp., *Banksia sessilis*, *Kunzea glabrescens* and *Jacksonia furcellata* dominating these areas. Sites exhibiting this trend include the Tuart, Biyara, Quenda, Karak, Moodjar and Bibool management zone. The Djara management zone also conforms to this pattern, however, coverage of Marri (*Corymbia calophylla*) and *Banksia* (*B. attenuata* and *B. menziesii*) are greater in the rehabilitation area, while Jarrah coverage is higher in the reference sites.

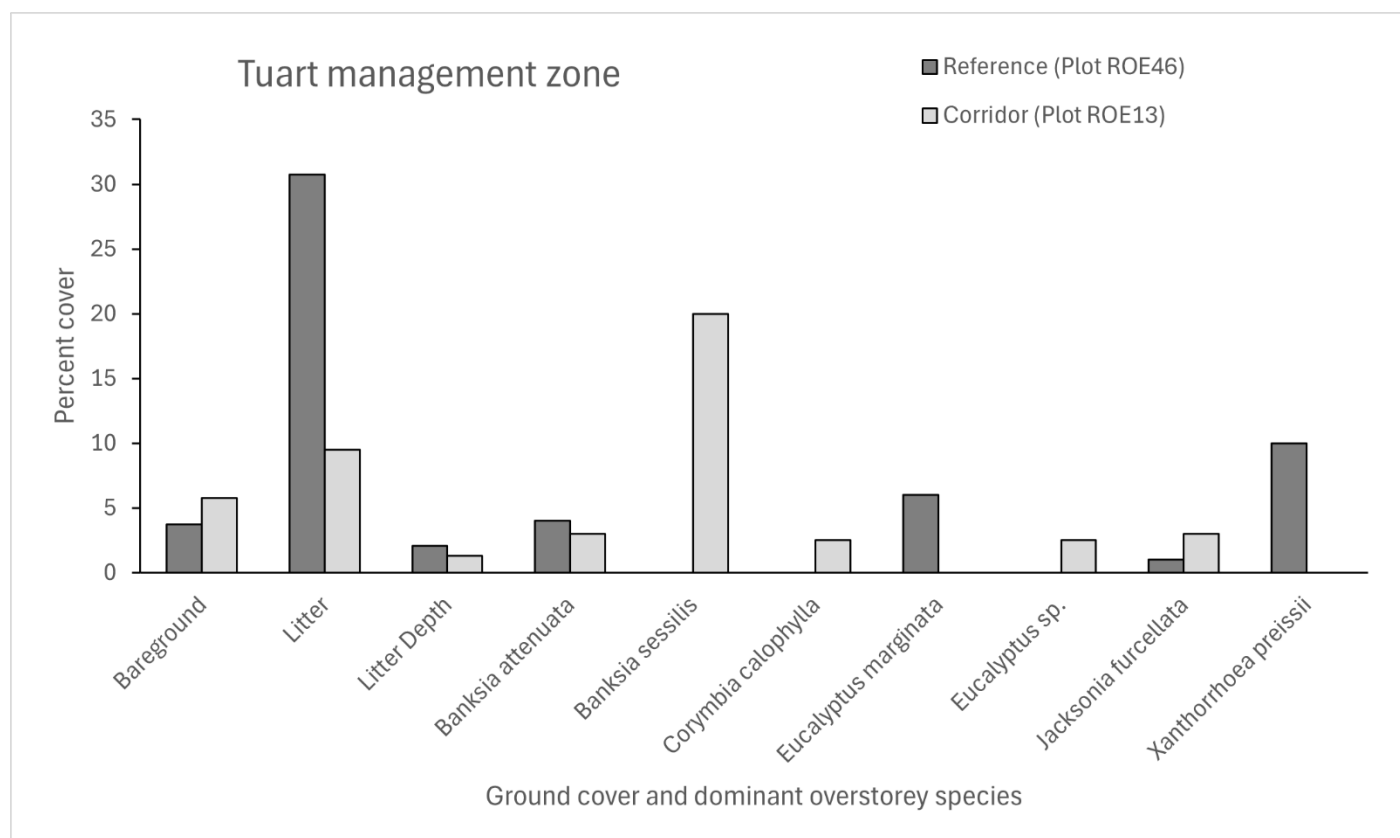


Figure 12: Percent cover of bare ground, leaf litter (including depth) and dominant overstorey plant species in reference and rehabilitation vegetation plots in proximity to systematic survey sites in the Tuart management zone.

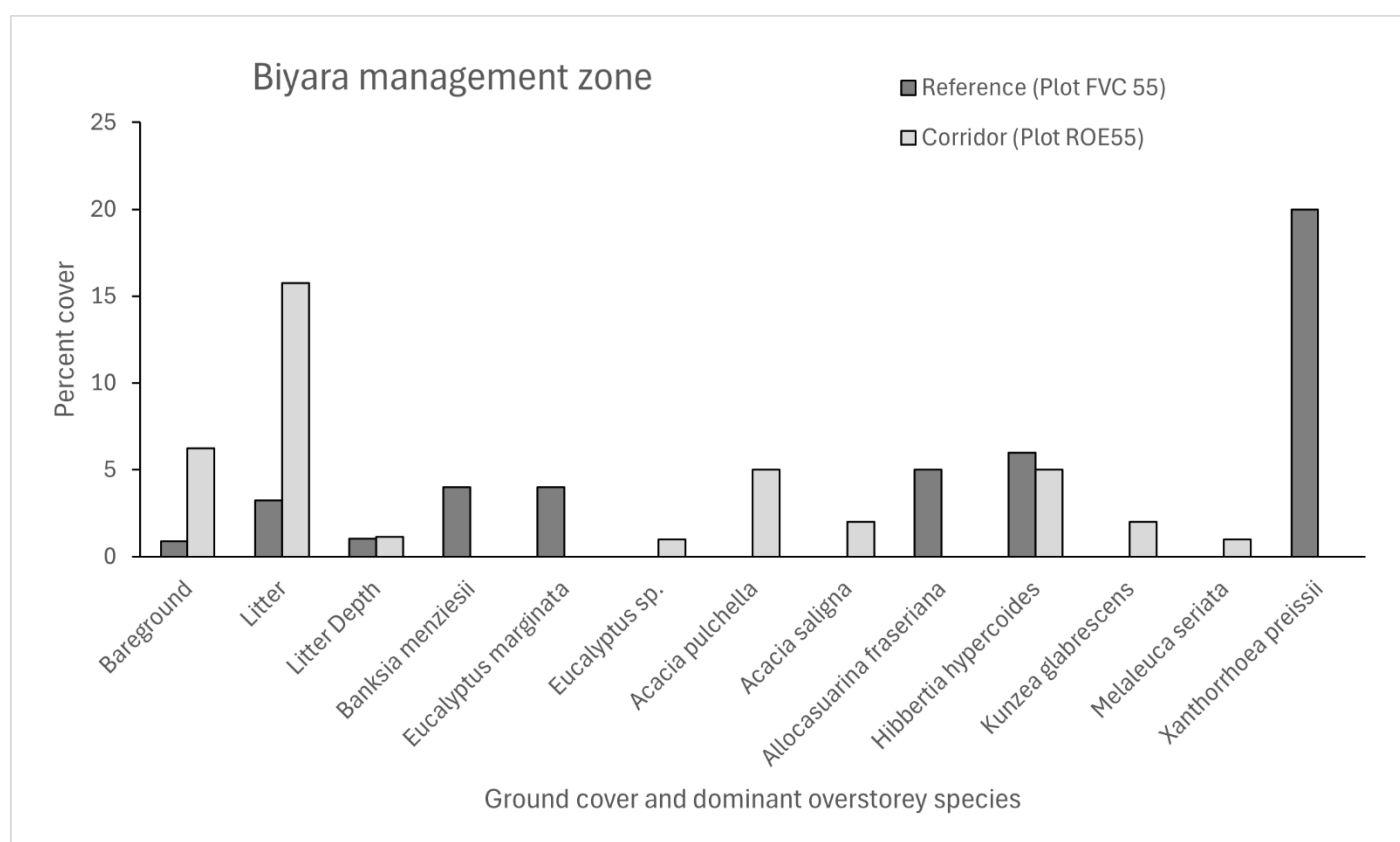


Figure 13: Percent cover of bare ground, leaf litter (including depth) and dominant overstorey plant species in reference and rehabilitation vegetation plots in proximity to systematic survey sites in the Biyara management zone.

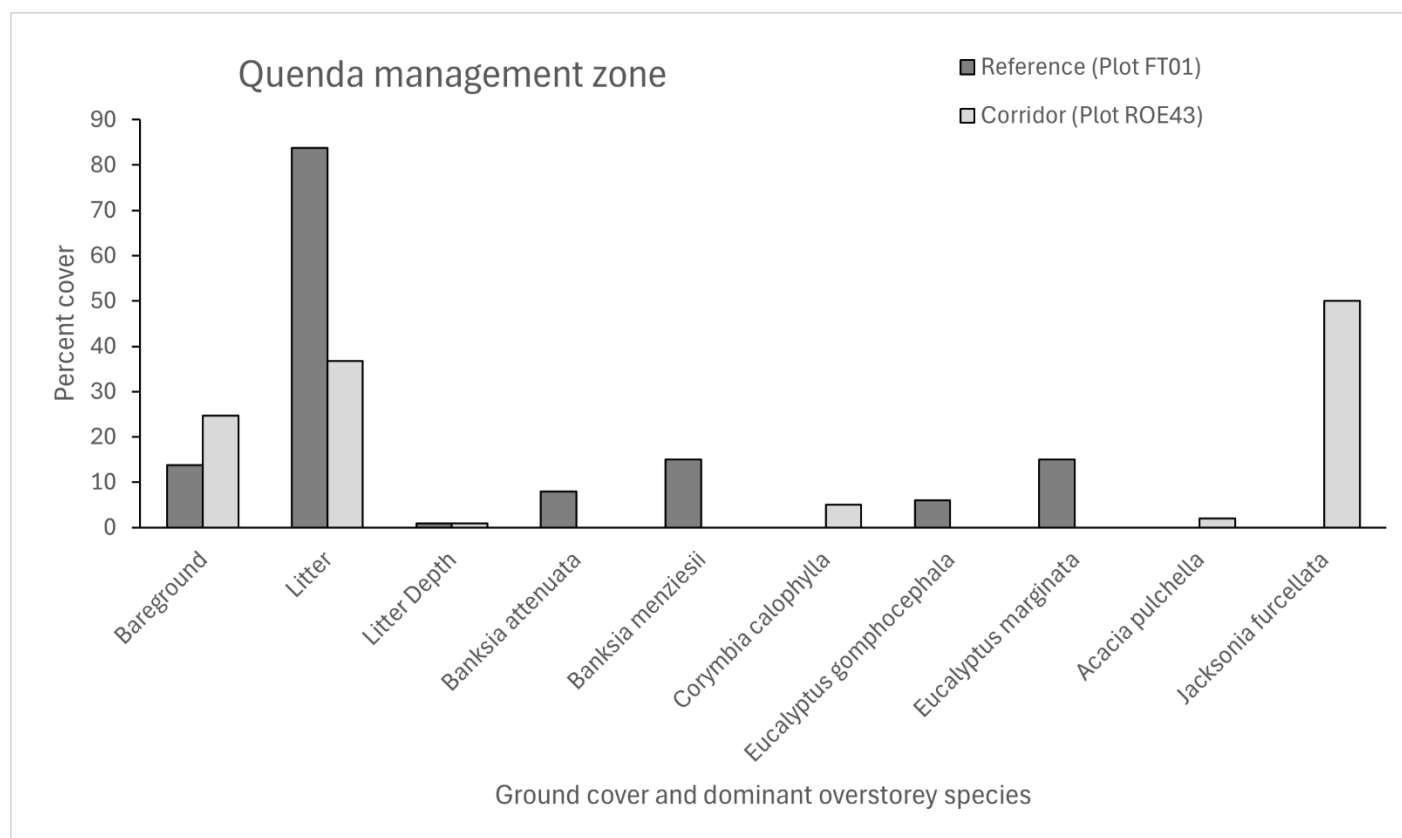


Figure 14: Percent cover of bare ground, leaf litter (including depth) and dominant overstorey plant species in reference and rehabilitation vegetation plots in proximity to systematic survey sites in the Quenda management zone.

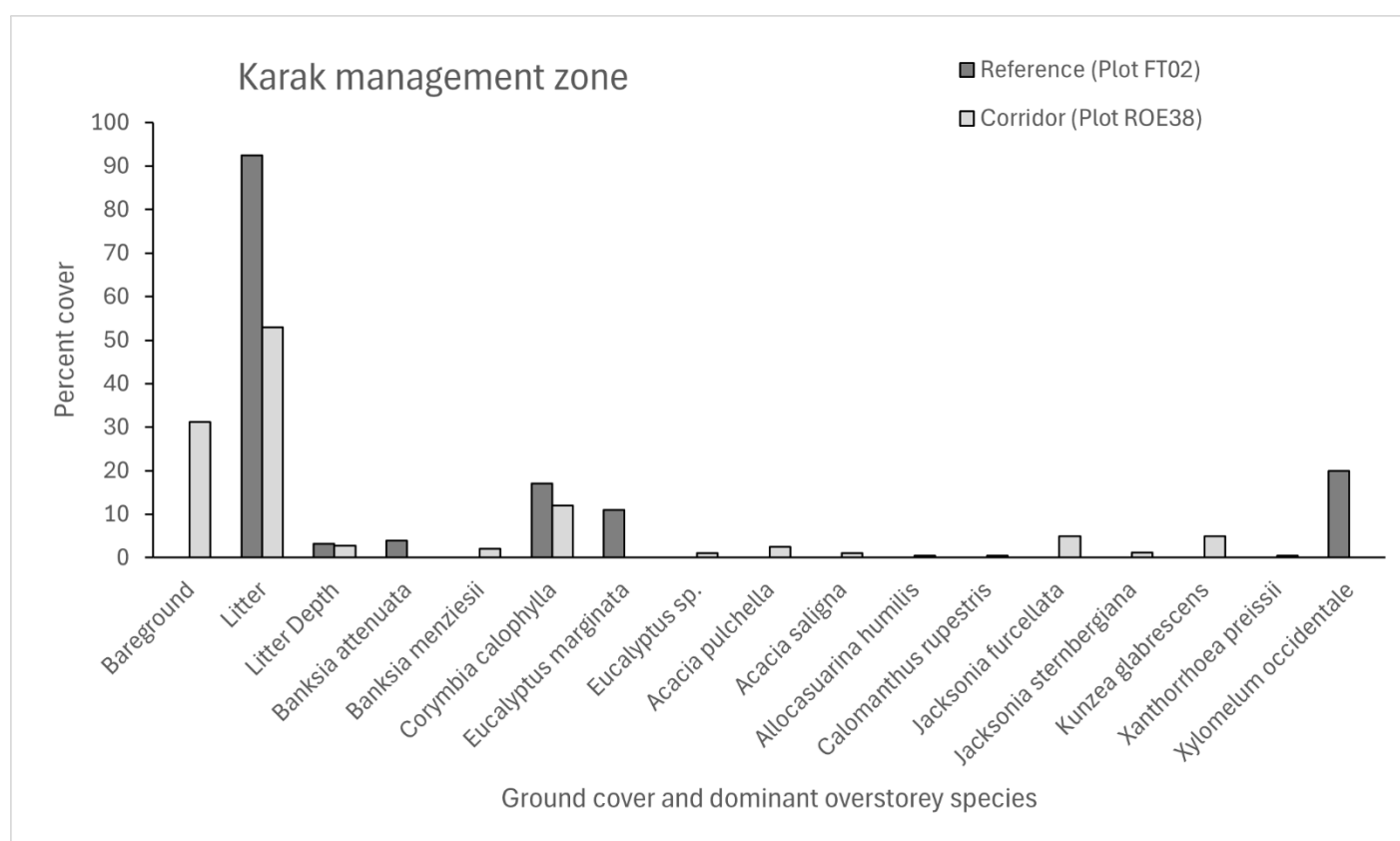


Figure 15: Percent cover of bare ground, leaf litter (including depth) and dominant overstorey plant species in reference and rehabilitation vegetation plots in proximity to systematic survey sites in the Karak management zone.

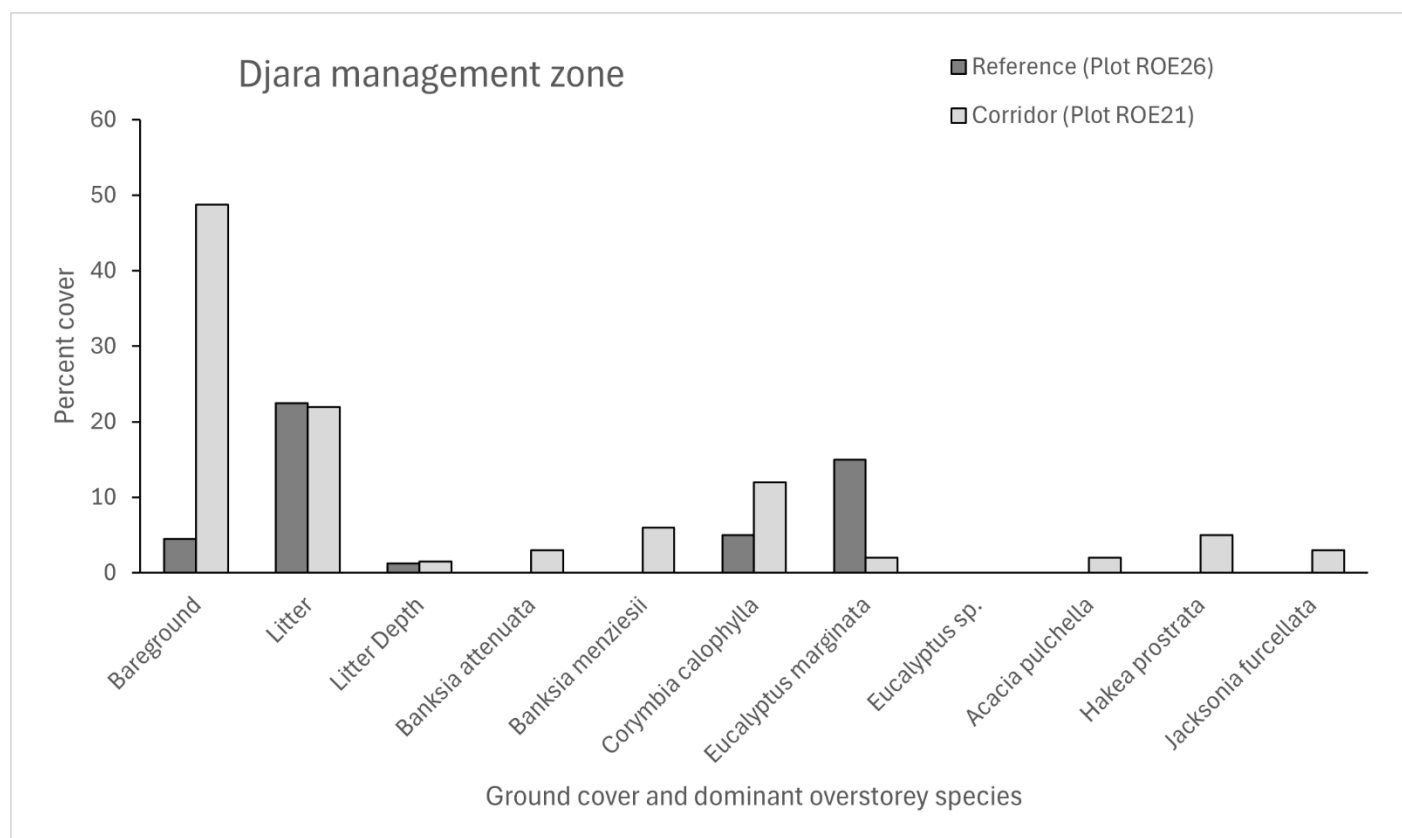


Figure 16: Percent cover of bare ground, leaf litter (including depth) and dominant overstorey plant species in reference and rehabilitation vegetation plots in proximity to systematic survey sites in the Djara management zone.

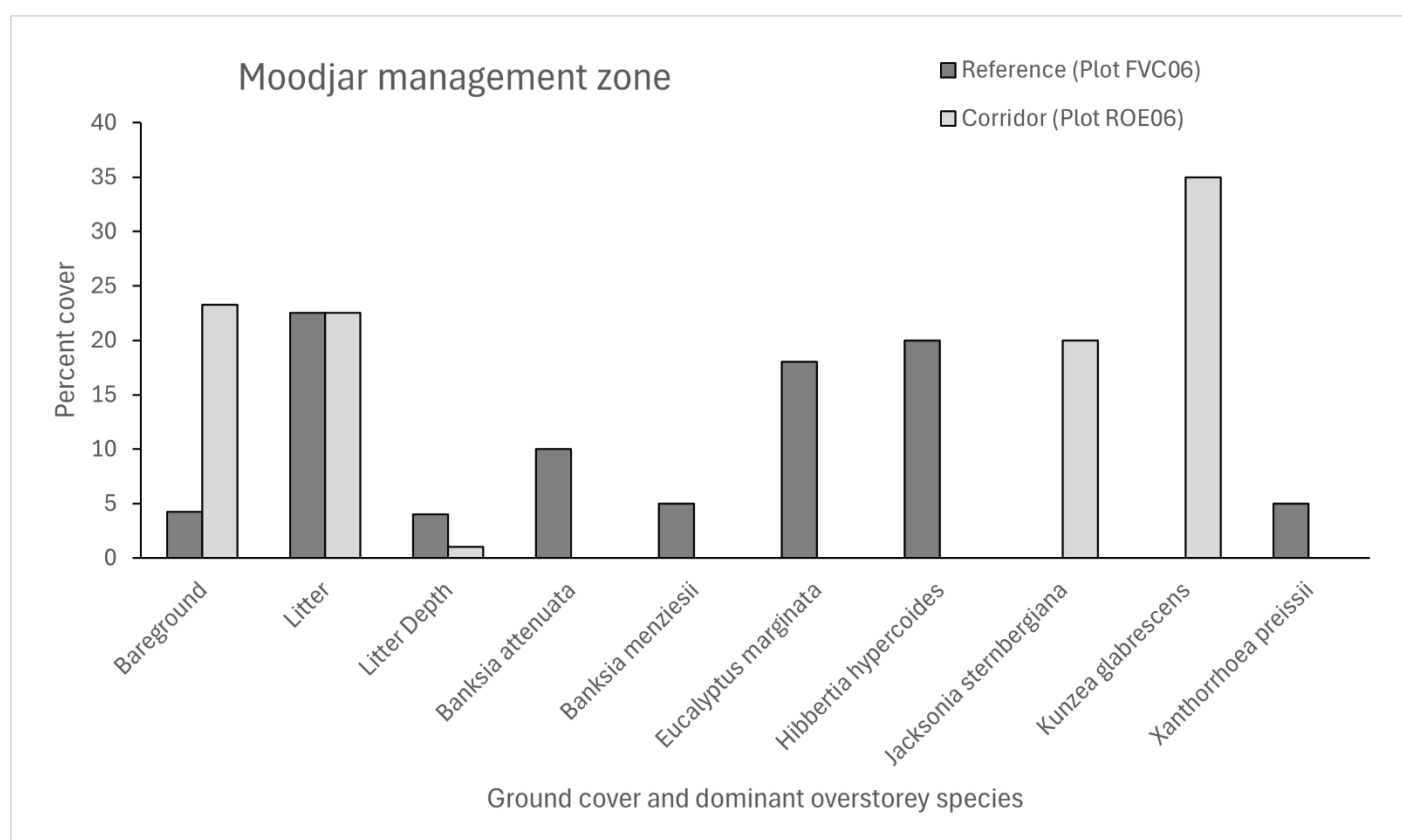


Figure 17: Percent cover of bare ground, leaf litter (including depth) and dominant overstorey plant species in reference and rehabilitation vegetation plots in proximity to systematic survey sites in the Moodjar management zone.

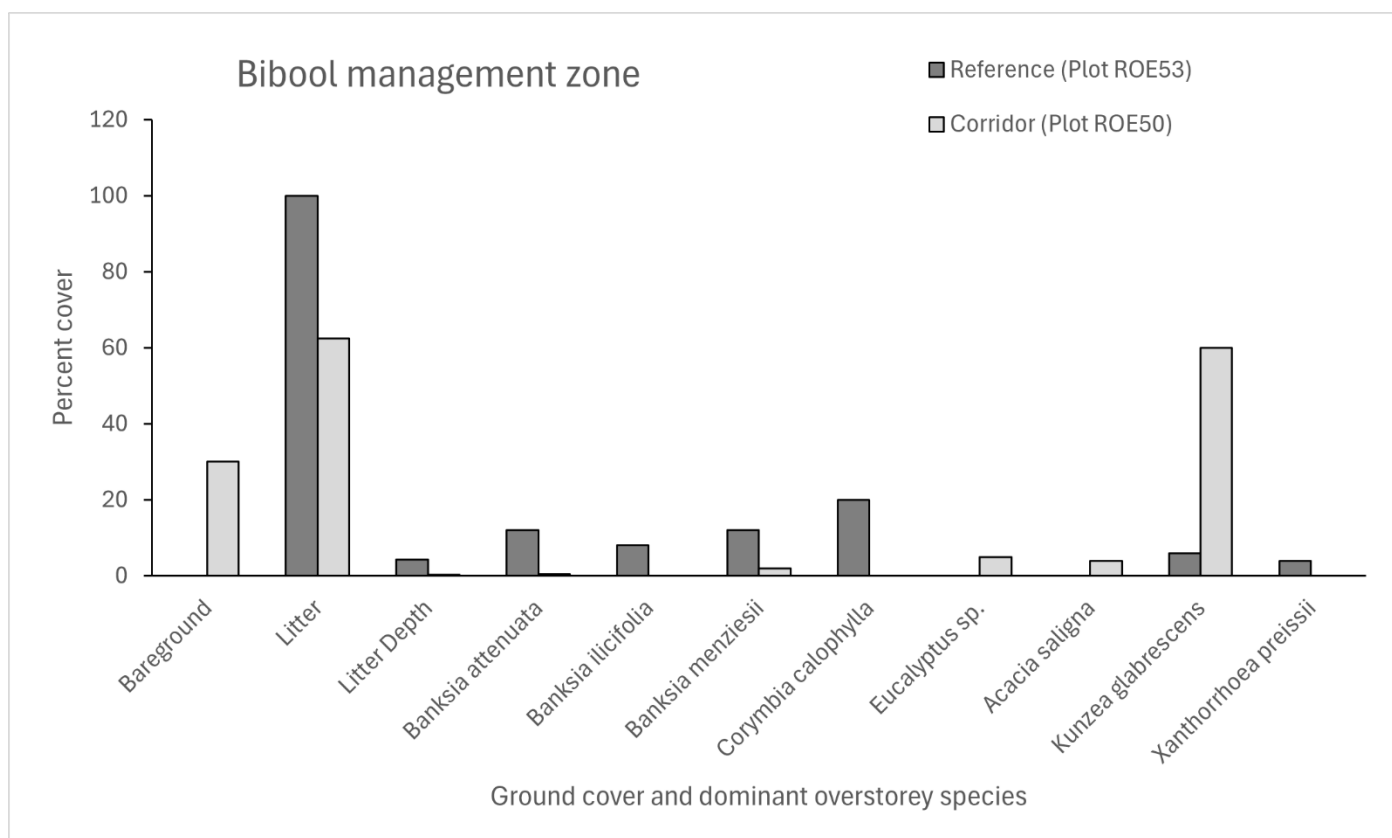


Figure 18: Percent cover of bare ground, leaf litter (including depth) and dominant overstorey plant species in reference and rehabilitation vegetation plots in proximity to systematic survey sites in the Bibool management zone.

3.3 Additional survey methods

3.3.1 Bat detection

The overall bat detection survey period from 1st to 21st November 2025 and 3rd to 9th February 2026 incorporated a total of 14 bat detector units left in-situ for a single night at 14 locations, equating to a total of 14 bat detection nights.

Five species of a potential nine species of bat were recorded during the current surveys, this included five in Jarrah-Banksia woodland, Banksia woodland and Wet forest-Woodland (Quenda, Moodjar and Bibool zones), and four in Tuart-Banksia woodland, Banksia-Woody pear woodland and remaining Jarrah-Banksia woodlands (Tuart, Karak, Biyara and Djara zones). Due to the wide-ranging nature of bats and proximity of reference and rehabilitated areas (thin, linear corridors), comparisons were not made for the current surveys, with data collected solely for presence/absence for each management zone.

Four species, the Free-tail bat (*Austronomus australis*), Gould's wattled bat (*Chalinolobus gouldi*), Lesser long-eared bat (*Nyctophilus geoffroyi*) and Southern forest bat (*Vespadelus regulus*) are common and widespread throughout the area, with several previous surveys detecting these, including Phoenix (2011) (Table 4). However, one additional species of bat, the Chocolate wattled bat (*Chalinolobus morio*) was detected during the current surveys, which was not detected during initial surveys in 2010 (see Phoenix 2011). Interestingly, this species has also not been previously detected during all five other surveys in the vicinity of the study area (Table 4). *Chalinolobus morio* is widespread in a range of habitats including wet forest, woodlands and mallee, where they predominantly roost in tree hollows and under exfoliating bark (Churchill, 1998) and it is unclear why *C. morio* was not previously detected.

Additionally, the Western freetail bat (*Ozimops kitcheneri*) was not detected during current surveys, but was previously detected by Phoenix (2011), but only in the far east of the study area, in the vicinity of the Moodjar and Bibool management zones. The species has also been recorded during several surveys in the surrounding area (see FaunaTrack 2022, 2018), with all records from the far eastern area of the study sites with 2018 and 2022 records all east of Bibra Lake (see FaunaTrack 2022, 2018). *Ozimops kitcheneri* occurs in a range of habitats including tall forest, open woodland, mallee and costal heath, where they predominantly roost in tree hollows (Churchill, 1998), and it is unclear why the species was not detected during current surveys, but appears to favour the low-lying habitats in proximity to the lakes and swamps and lakes in and around the east of the alignment. The current lack of large, mature trees in the rehabilitation area may be a potential reason for their apparent absence but requires further investigation.

Table 16. Results of bat call recording analysis outlining the date, site and species detected

Phase	Location	Date	Habitat	<i>Austronomus australis</i>	<i>Chalinolobus gouldii</i>	<i>Chalinolobus morio</i>	<i>Nyctophilus geoffroyi</i>	<i>Vespadelus regulus</i>	Total species
1	Moodjar	01-Nov-25	Banksia woodland	+	+	+	+	+	5
	Bibool	02-Nov-25	Woodland/wet forest	+	+	+	+	+	5
	Quenda	03-Nov-25	Banksia-Jarrah	+	+	+		+	4
	Tuart	06-Nov-25	Banksia-Tuart	+	+		+	+	4
	Djara	07-Nov-25	Banksia-Jarrah	+	+		+	+	4
	Karak	20-Nov-25	Banksia-Woody pear		+	+		+	3
	Biyara	21-Nov-25	Banksia-Jarrah		+	+		+	3
2	Djara	03-Feb-26	Banksia-Jarrah		+		+	+	3
	Biyara	04-Feb-26	Banksia-Jarrah	+	+			+	3
	Tuart	05-Feb-26	Banksia-Tuart	+	+		+		3
	Moodjar	06-Feb-26	Banksia woodland	+	+		+	+	4
	Quenda	07-Feb-26	Banksia-Jarrah	+	+		+	+	4
	Karak	08-Feb-26	Banksia-Woody pear		+	+	+	+	4
	Bibool	09-Feb-26	Woodland/wet forest	+	+	+		+	4
Combined survey total	Tuart			+	+		+	+	4
	Biyara			+	+	+		+	4
	Quenda			+	+	+	+	+	5
	Karak				+	+	+	+	4
	Djara			+	+		+	+	4
	Moodjar			+	+	+	+	+	5
	Bibool			+	+	+	+	+	5

3.3.2 Targeted searches

Targeted searches were undertaken in all management zones except Yaakan, with surveys being undertaken for an hour by two people in both a reference and rehabilitated sites in each zone. Twenty-eight person hours were spent undertaking targeted searches (two person hours per site), with searches recording numerous foraging observations of Carnaby's and Forest red-tailed black-cockatoo throughout much of the study area, as well as Rainbow bee-eater burrows along the powerline easement in Moodjar and Bibool, as well as additional records of frogs, reptiles and birds throughout the study area. This included additional live sightings of reptiles such as the Dugite and South-west cool skink that were infrequently detected through other methods. Sightings were also made of locally significant fauna either infrequently or not recorded through other methods, including Brushtail possum scats, and single observations of the Square-tailed kite and Australian hobby. Targeted searches also recorded further information on feral animal distribution, including observations of Cat scats, Fox scats and burrows, Rabbit buckheaps and warrens and several bee hives (Table 17; Map 11).



Figure 19: (a) One of several Rainbow bee-eater burrows located within the rehabilitation area of Moodjar during current surveys; (b) A cat scat detected in the rehabilitation area with the Djara management zone; (c) A Square-tailed kite detected for the first time in the study area.

Table 17: Details of all fauna species detected during targeted fauna surveys of the study area during 2025.

Date	Zone	Treatment	Latitude	Longitude	Species	Count	Comments
2/09/25	Tuart	Rehabilitated	-32.090275	115.796486	<i>Cryptoblepharus buechananii</i>	4	Sighting
2/09/25	Tuart	Reference	-32.090545	115.79655	<i>Cryptoblepharus buechananii</i>	4	Sighting
2/09/25	Tuart	Reference	-32.090545	115.79655	<i>Ctenotus fallens</i>	1	Sighting
30/09/25	Tuart	Reference	-32.088718	115.794953	Carnaby's cockatoo	9	Feeding under bark in Tuart
30/09/25	Tuart	Reference	-32.08902	115.7962	Carnaby's cockatoo	2	Foraging in <i>B. sessilis</i>
30/09/25	Tuart	Reference	-32.09004	115.796137	Carnaby's cockatoo	1	Forage
30/09/25	Tuart	Reference	-32.090922	115.79673	Carnaby's cockatoo	1	Forage
30/09/25	Tuart	Reference	-32.089163	115.79624	<i>Vulpes vulpes</i>	1	Warren
30/09/25	Quenda	Reference	-32.089033	115.798473	Brown goshawk	2	Nest in large Tuart
30/09/25	Quenda	Reference	-32.08881	115.799653	Carnaby's cockatoo	1	Small flock observed
30/09/25	Quenda	Rehabilitated	-32.089677	115.80533	Forest red-tailed black cockatoo	1	Marri Forage
30/09/25	Quenda	Reference	-32.08881	115.79958	Bees	1	In hollow of large Tuart
30/09/25	Quenda	Rehabilitated	-32.089622	115.805003	<i>Oryctolagus cuniculus</i>	1	Warren
30/09/25	Quenda	Reference	-32.088643	115.79814	<i>Aprasia repens</i>	1	Sighting
30/09/25	Quenda	Reference	-32.089157	115.800217	<i>Cryptoblepharus buechananii</i>	1	Sighting
30/09/25	Quenda	Reference	-32.089218	115.800363	<i>Cryptoblepharus buechananii</i>	1	Sighting
30/09/25	Quenda	Reference	-32.088875	115.799058	<i>Hemiergis quadrilineata</i>	1	Sighting
30/09/25	Quenda	Reference	-32.089292	115.79814	<i>Hemiergis quadrilineata</i>	1	Sighting
30/09/25	Quenda	Rehabilitated	-32.089512	115.804163	<i>Menetia greyii</i>	1	Sighting
30/09/25	Quenda	Rehabilitated	-32.08958	115.804543	<i>Menetia greyii</i>	1	Sighting
30/09/25	Quenda	Rehabilitated	-32.089622	115.805003	<i>Menetia greyii</i>	1	Sighting
30/09/25	Quenda	Rehabilitated	-32.089482	115.802978	<i>Morethia obscura</i>	1	Sighting
30/09/25	Quenda	Rehabilitated	-32.08934	115.80304	<i>Morethia obscura</i>	1	Sighting
30/09/25	Quenda	Rehabilitated	-32.089662	115.80372	<i>Morethia obscura</i>	1	Sighting
30/09/25	Quenda	Reference	-32.088643	115.79814	<i>Morethia obscura</i>	1	Sighting
30/09/25	Biyara	Rehabilitated	-32.08777	115.79885	Australian hobby	1	Sighting
30/09/25	Biyara	Rehabilitated	-32.088369	115.799934	Brown goshawk	1	Sighting
30/09/25	Biyara	Reference	-32.08826	115.800863	Carnaby's cockatoo	1	Forage
30/09/25	Biyara	Reference	-32.087985	115.800602	Carnaby's cockatoo	1	Forage
30/09/25	Biyara	Reference	-32.087782	115.800342	Bees	1	In hollow of large Tuart
30/09/25	Biyara	Rehabilitated	-32.088122	115.79938	<i>Oryctolagus cuniculus</i>	1	Buckheap
30/09/25	Biyara	Reference	-32.087097	115.799295	<i>Oryctolagus cuniculus</i>	1	Warren
30/09/25	Biyara	Rehabilitated	-32.087925	115.799648	<i>Aprasia repens</i>	1	Sighting
30/09/25	Biyara	Rehabilitated	-32.088033	115.799928	<i>Cryptoblepharus buechananii</i>	1	Sighting
30/09/25	Biyara	Rehabilitated	-32.087182	115.798518	<i>Cryptoblepharus buechananii</i>	1	Sighting
30/09/25	Biyara	Rehabilitated	-32.086843	115.798482	<i>Cryptoblepharus buechananii</i>	1	Sighting
30/09/25	Biyara	Reference	-32.088303	115.801263	<i>Cryptoblepharus buechananii</i>	1	Sighting
30/09/25	Biyara	Reference	-32.087158	115.799252	<i>Ctenotus fallens</i>	1	Sighting
30/09/25	Biyara	Reference	-32.087158	115.799252	<i>Morethia obscura</i>	1	Sighting
30/09/25	Biyara	Reference	-32.087158	115.799252	<i>Pseudonaja affinis</i>	1	Sighting
1/10/25	Djara	Rehabilitated	-32.08521	115.819805	Carnaby's cockatoo	1	Sighting
1/10/25	Djara	Rehabilitated	-32.084565	115.818258	Carnaby's cockatoo	1	in large Tuart
1/10/25	Djara	Reference	-32.085328	115.820125	Carnaby's cockatoo	1	Observed in small jarrah
1/10/25	Djara	Rehabilitated	-32.085238	115.819712	Forest red-tailed black cockatoo	4	Feeding in rehab Marri
1/10/25	Djara	Rehabilitated	-32.084467	115.820745	Forest red-tailed black cockatoo	1	Forage
1/10/25	Djara	Rehabilitated	-32.084877	115.819252	Forest red-tailed black cockatoo	1	Forage
1/10/25	Djara	Rehabilitated	-32.084997	115.818728	Forest red-tailed black cockatoo	1	Forage
1/10/25	Djara	Rehabilitated	-32.085477	115.818455	Forest red-tailed black cockatoo	1	forage
1/10/25	Djara	Rehabilitated	-32.085492	115.818237	Forest red-tailed black cockatoo	1	forage
1/10/25	Djara	Rehabilitated	-32.085065	115.818212	Forest red-tailed black cockatoo	1	Forage
1/10/25	Djara	Rehabilitated	-32.085115	115.819308	Splendid fairy-wren	1	Sighting
1/10/25	Djara	Rehabilitated	-32.085095	115.818915	<i>Felis catus</i>	1	Scat
1/10/25	Djara	Rehabilitated	-32.084493	115.820462	<i>Oryctolagus cuniculus</i>	1	Buckheap
1/10/25	Djara	Rehabilitated	-32.085042	115.819108	<i>Oryctolagus cuniculus</i>	1	Buckheap
1/10/25	Djara	Rehabilitated	-32.084982	115.819143	<i>Oryctolagus cuniculus</i>	1	Buckheap
1/10/25	Djara	Rehabilitated	-32.085495	115.818567	<i>Oryctolagus cuniculus</i>	1	Buckheap
1/10/25	Djara	Rehabilitated	-32.085528	115.818572	<i>Oryctolagus cuniculus</i>	1	Buckheap
1/10/25	Djara	Rehabilitated	-32.085552	115.818597	<i>Oryctolagus cuniculus</i>	1	Buckheap
1/10/25	Djara	Rehabilitated	-32.08553	115.818192	<i>Oryctolagus cuniculus</i>	1	Buckheap
1/10/25	Djara	Reference	-32.085133	115.820897	<i>Oryctolagus cuniculus</i>	1	Warren
1/10/25	Djara	Reference	-32.085115	115.821112	<i>Oryctolagus cuniculus</i>	1	Warren
1/10/25	Djara	Reference	-32.08573	115.819432	<i>Cryptoblepharus buechananii</i>	1	Sighting

Date	Zone	Treatment	Latitude	Longitude	Species	Count	Comments
1/10/25	Djara	Reference	-32.08558	115.819532	<i>Cryptoblepharus buehnananii</i>	1	Sighting
1/10/25	Djara	Reference	-32.084612	115.821768	<i>Cryptoblepharus buehnananii</i>	1	Sighting
30/09/25	Karak	Rehabilitated	-32.088158	115.81019	Forest red-tailed black cockatoo	1	Marri Forage
30/09/25	Karak	Rehabilitated	-32.088273	115.809692	Forest red-tailed black cockatoo	1	Marri Forage
30/09/25	Karak	Rehabilitated	-32.088383	115.80941	Forest red-tailed black cockatoo	1	Foraging in small Marri
30/09/25	Karak	Rehabilitated	-32.088445	115.809023	Forest red-tailed black cockatoo	1	Marri Forage
30/09/25	Karak	Reference	-32.088063	115.80958	Forest red-tailed black cockatoo	1	Marri Forage
30/09/25	Karak	Reference	-32.088245	115.809285	Forest red-tailed black cockatoo	1	Marri Forage
30/09/25	Karak	Reference	-32.089013	115.80808	Forest red-tailed black cockatoo	1	Marri Forage
30/09/25	Karak	Reference	-32.089022	115.808352	Forest red-tailed black cockatoo	1	Marri Forage
30/09/25	Karak	Reference	-32.088915	115.809377	Forest red-tailed black cockatoo	3	Foraging in small Marri
30/09/25	Karak	Reference	-32.088422	115.810205	Forest red-tailed black cockatoo	1	Marri Forage
30/09/25	Karak	Reference	-32.087888	115.810477	Tawny frogmouth	1	On nest
30/09/25	Karak	Rehabilitated	-32.088692	115.808927	<i>Hemiergis quadrilineata</i>	1	Sighting
30/09/25	Karak	Rehabilitated	-32.088798	115.808602	<i>Lerista elegans</i>	1	Sighting
30/09/25	Karak	Rehabilitated	-32.088337	115.8098	<i>Menetia greyii</i>	1	Sighting
30/09/25	Karak	Rehabilitated	-32.088393	115.809213	<i>Pogona minor</i>	1	Sighting
30/09/25	Karak	Rehabilitated	-32.08834	115.809883	<i>Tiliqua rugosa</i>	1	Sighting
30/09/25	Karak	Rehabilitated	-32.088862	115.808297	<i>Tiliqua rugosa</i>	1	Sighting
1/10/25	Moodjar	Rehabilitated	-32.08252	115.832922	<i>Crinia georgiana</i>	5	Sighting
1/10/25	Moodjar	Rehabilitated	-32.08252	115.832922	<i>Crinia glauerti</i>	10	Sighting
1/10/25	Moodjar	Rehabilitated	-32.083027	115.828808	<i>Accipiter sp.</i>	1	Prey/feathers
1/10/25	Moodjar	Reference	-32.082472	115.831797	Carnaby's cockatoo	1	Forage
1/10/25	Moodjar	Reference	-32.082473	115.831073	Carnaby's cockatoo	1	Forage
1/10/25	Moodjar	Reference	-32.082672	115.83059	Carnaby's cockatoo	1	Forage
1/10/25	Moodjar	Reference	-32.082853	115.829207	Carnaby's cockatoo	1	Forage (ilicifolia)
1/10/25	Moodjar	Reference	-32.082788	115.828745	Carnaby's cockatoo	1	Forage (ilicifolia)
1/10/25	Moodjar	Reference	-32.082867	115.833015	Square-tailed kite	1	Sighting
1/10/25	Moodjar	Rehabilitated	-32.083258	115.828105	<i>Oryctolagus cuniculus</i>	1	buckheap (outside fence)
1/10/25	Moodjar	Rehabilitated	-32.083123	115.828247	<i>Oryctolagus cuniculus</i>	1	buckheap (outside fence)
1/10/25	Moodjar	Rehabilitated	-32.083063	115.828302	<i>Oryctolagus cuniculus</i>	1	buckheap (outside fence)
1/10/25	Moodjar	Reference	-32.082848	115.828762	<i>Oryctolagus cuniculus</i>	1	Buckheap
1/10/25	Moodjar	Reference	-32.082735	115.828658	<i>Oryctolagus cuniculus</i>	1	Buckheap
1/10/25	Moodjar	Reference	-32.082787	115.829283	<i>Cryptoblepharus buehnananii</i>	1	Sighting
1/10/25	Moodjar	Rehabilitated	-32.082817	115.831262	<i>Pogona minor</i>	1	Sighting
1/10/25	Moodjar	Rehabilitated	-32.082627	115.83291	<i>Tiliqua rugosa</i>	1	Sighting
1/10/25	Bibool	Reference	-32.083783	115.836892	<i>Crinia georgiana</i>	3	Sighting
1/10/25	Bibool	Reference	-32.083783	115.836892	<i>Crinia glauerti</i>	5	Sighting
1/10/25	Bibool	Reference	-32.083732	115.836255	<i>Litoria adelaidensis</i>	1	Sighting
1/10/25	Bibool	Reference	-32.08364	115.83657	Forest red-tailed black cockatoo	1	Marri Forage
1/10/25	Bibool	Reference	-32.082988	115.837705	Splendid fairy-wren	1	Sighting
1/10/25	Bibool	Reference	-32.083768	115.836503	Bees	1	Hive in Banksia littoralis
1/10/25	Bibool	Rehabilitated	-32.082782	115.836318	<i>Oryctolagus cuniculus</i>	1	Buckheap
1/10/25	Bibool	Reference	-32.083763	115.836942	<i>Vulpes vulpes</i>	1	Scat
1/10/25	Bibool	Reference	-32.083783	115.836892	<i>Acrisoscincus trilineatus</i>	1	Sighting

3.3.3 Frog census

The survey period incorporated two-nights (totalling four person hours) of frog surveys at three sites. Surveys detected six of a potential nine species of frog, with three species of frog not detected in other surveys methods, the Quacking frog, Rattling froglet and Squelching froglet. The Quacking frog and (some Rattling froglets) were only detected in the swamplands of the Bibool management zone and the far east of the Moodjar management zone, with several Quacking frogs observed calling within flooded vegetation on both the reference and rehabilitation areas, and large choruses of Rattling frogs in both areas also. The Squelching frog was only recorded in the Yaakan management zone, with a small number of individuals observed calling from the edge of Bibra Lake in dense reeds, with Rattling frogs observed calling here as well. Slender tree frogs were observed calling in the swamplands in the east of Moodjar and Bibool and the reed beds on the edge of Yaakan, while Moaning frogs and Banjo frogs were only observed in the vicinity of the swamplands in the east of Moodjar and Bibool. No observations of frogs were made in the vicinity of Horse Lake in the western part of Moodjar (Table 18).

Table 18: Results of frog surveys undertaken in the Bibool, Yaakan and Moodjar management zones during August 2025.

Date	Location	Lat	Long	Species	#	Comments
20/08/25	East Moodjar/Bibool	-32.082475	115.834935	<i>Crinia georgiana</i>	>20	Calling from flooded vegetation
20/08/25	East Moodjar/Bibool	-32.082475	115.834935	<i>Limnodynastes dorsalis</i>	5	Not calling
20/08/25	East Moodjar/Bibool	-32.082475	115.834935	<i>Crinia glauerti</i>	>100	Calling from flooded vegetation
20/08/25	East Moodjar/Bibool	-32.082475	115.834935	<i>Heleioporus eyrei</i>	2	Adjacent to flooded woodland
21/08/25	Turtle Corner/Yaakan	-32.084158	115.823472	<i>Crinia insignifera</i>	5	Calling from reeds on edge of lake
21/08/25	Turtle Corner/Yaakan	-32.084158	115.823472	<i>Crinia glauerti</i>	5	Calling from reeds on edge of lake
21/08/25	Turtle Corner/Yaakan	-32.084158	115.823472	<i>Limnodynastes dorsalis</i>	5	Calling from reeds on edge of lake
21/08/25	Turtle Corner/Yaakan	-32.084158	115.823472	<i>Litoria adelaidensis</i>	5	Calling from reeds on edge of lake
21/08/25	Horse Lake/West Moodjar	-32.08277	115.824977	NIL		



Figure 20: (a) The locally significant Quacking frog (*Crinia georgiana*) was readily detectable in flooded woodlands in both the reference and rehabilitated (b) areas of the Bibool and Moodjar management zones.

3.3.4 Spotlighting transects

The survey period incorporated six-nights (totalling 18 person hours) of nocturnal spotlight surveys throughout all eight management zones. Surveys detected several observations of night birds such as the Tawny frogmouth and Southern boobook, as well as several observations of the Marbled gecko and frog species (Table 19). Several species, including Southern boobook owls and Motorbike frog were only detected through spotlight searches.

Species such as the Tawny frogmouth, Southern boobook and Marbled geckos were only detected in reference areas, or in large trees/logs on the edge of rehabilitation areas, and it likely that these species are more dependent on large, mature trees and other vegetation such as grass trees which are generally absent in rehabilitation areas (see Vegetation Assessment results).



Figure 21. (a) A Southern boobook detected on the edge of the reference/rehabilitation area in the Tuart management zone; (b) The Marbled gecko (*Christinus marmoratus*) was generally only recorded from mature Eucalypts and Grass trees.

Table 19: Details of all fauna species detected during nocturnal spotlight surveys of the study area during 2025 and 2026.

Date	Management zone	Treatment	Species		Abundance	Observation type
20/11/2025	Tuart	Reference	Tawny Frogmouth		1	Sighting
20/11/2025	Tuart	Reference	Quenda	<i>Isoodon fusciventer</i>	1	Killed by slasher on track
20/11/2025	Tuart	Reference	Black rat	<i>Rattus rattus</i>	1	Sighting
20/11/2025	Tuart	Reference	Marbled gecko	<i>Christinus marmoratus</i>	5	Sighting
20/11/2025	Tuart	Reference	Southern boobook		4	Sighting
20/11/2025	Biyara	Rehabilitated *	Tawny Frogmouth		1	Sighting
20/11/2025	Biyara	Rehabilitated	Bearded dragon	<i>Pogona minor</i>	2	Sighting
20/11/2025	Biyara	Reference	Red wattlebird		2	Sighting
21/11/2025	Quenda	Rehabilitated *	Tawny Frogmouth		2	Sighting
21/11/2025	Quenda	Rehabilitated *	Marbled gecko	<i>Christinus marmoratus</i>	1	Sighting
21/11/2025	Quenda	Reference	Tawny Frogmouth		1	Sighting
21/11/2025	Quenda	Reference	Marbled gecko	<i>Christinus marmoratus</i>	1	Sighting
21/11/2025	Karak	Rehabilitated *	Marbled gecko	<i>Christinus marmoratus</i>	1	Sighting
21/11/2025	Karak	Reference	Australian raven		1	Sighting
21/11/2025	Karak	Reference	Marbled gecko	<i>Christinus marmoratus</i>	1	Sighting
22/11/2025	Djara	Rehabilitated	Moaning frog	<i>Heleioporus eyrei</i>	1	Sighting
22/11/2025	Yaakan	Rehabilitated	Moaning frog	<i>Heleioporus eyrei</i>	1	Sighting
22/11/2025	Yaakan	Rehabilitated	Motorbike frog	<i>Litoria moorei</i>	1	Sighting
22/11/2025	Yaakan	Reference	Rattling froglet	<i>Crinia glauerti</i>	10	Calling (lake edge)
22/11/2025	Yaakan	Reference	Slender tree frog	<i>Litoria adelaidensis</i>	5	Calling (lake edge)
22/11/2025	Yaakan	Reference	Motorbike frog	<i>Litoria moorei</i>	1	Sighting
22/11/2025	Moodjar	Rehabilitated	Moaning frog	<i>Heleioporus eyrei</i>	4	Sighting
22/11/2025	Moodjar	Reference	Cat	<i>Felis catus</i>	1	Sighting
22/11/2025	Bibool	Rehabilitated	Rattling froglet	<i>Crinia glauerti</i>	5	Calling
22/11/2025	Bibool	Rehabilitated	Moaning frog	<i>Heleioporus eyrei</i>	1	Sighting
22/11/2025	Bibool	Rehabilitated	Banjo frog	<i>Limnodynastes dorsalis</i>	2	Sighting
22/11/2025	Bibool	Rehabilitated	Slender tree frog	<i>Litoria adelaidensis</i>	1	Calling
6/02/2026	Tuart	Rehabilitated *	Marbled gecko	<i>Christinus marmoratus</i>	2	Sighting
6/02/2026	Tuart	Reference	Quenda	<i>Isoodon fusciventer</i>	2	Sighting
6/02/2026	Tuart	Rehabilitated *	Southern boobook		1	Sighting
6/02/2026	Biyara	Reference	Black rat	<i>Rattus rattus</i>	2	Sighting
6/02/2026	Djara	Rehabilitated	Rabbit	<i>Oryctolagus cuniculus</i>	2	Sighting
7/02/2026	Quenda	Rehabilitated	Rabbit	<i>Oryctolagus cuniculus</i>	2	Sighting
7/02/2026	Quenda	Rehabilitated *	Marbled gecko	<i>Christinus marmoratus</i>	2	Sighting
7/02/2026	Quenda	Reference	Quenda	<i>Isoodon fusciventer</i>	1	Sighting
7/02/2026	Quenda	Reference	Rabbit	<i>Oryctolagus cuniculus</i>	1	Sighting
7/02/2026	Quenda	Reference	Quenda	<i>Isoodon fusciventer</i>	1	Sighting
7/02/2026	Quenda	Reference	Rabbit	<i>Oryctolagus cuniculus</i>	1	Sighting
7/02/2026	Quenda	Reference	Marbled gecko	<i>Christinus marmoratus</i>	2	Sighting
7/02/2026	Karak	Reference	Rabbit	<i>Oryctolagus cuniculus</i>	1	Sighting
7/02/2026	Karak	Reference	Quenda	<i>Isoodon fusciventer</i>	1	Sighting
7/02/2026	Karak	Reference	Marbled gecko	<i>Christinus marmoratus</i>	4	Sighting
5/02/2026	Bibool	Rehabilitated	Moaning frog	<i>Heleioporus eyrei</i>	20	Sighting
5/02/2026	Bibool	Rehabilitated	Slender tree frog	<i>Litoria adelaidensis</i>	2	Sighting
5/02/2026	Moodjar	Reference	Southern boobook		2	Sighting

*Species recorded on large, mature trees and/or large logs within or on the edge of rehabilitation areas and/or flyovers

3.3.5 Opportunistic observations

Several species were detected opportunistically during the survey that were not detected through other methods. This included the shed skin (slough) of the Specially Protected South-west carpet python (*Morelia spilota imbricata*), live observation of the locally significant Nankeen night-heron, and observations of a small flock of Chestnut-breasted mannikins. This also included the remains of a quenda under the powerlines within the fenced area of Moodjar, as well as some lizard tracks resembling the King skink (*Egernia kingii*) (Figures 22 a-f).

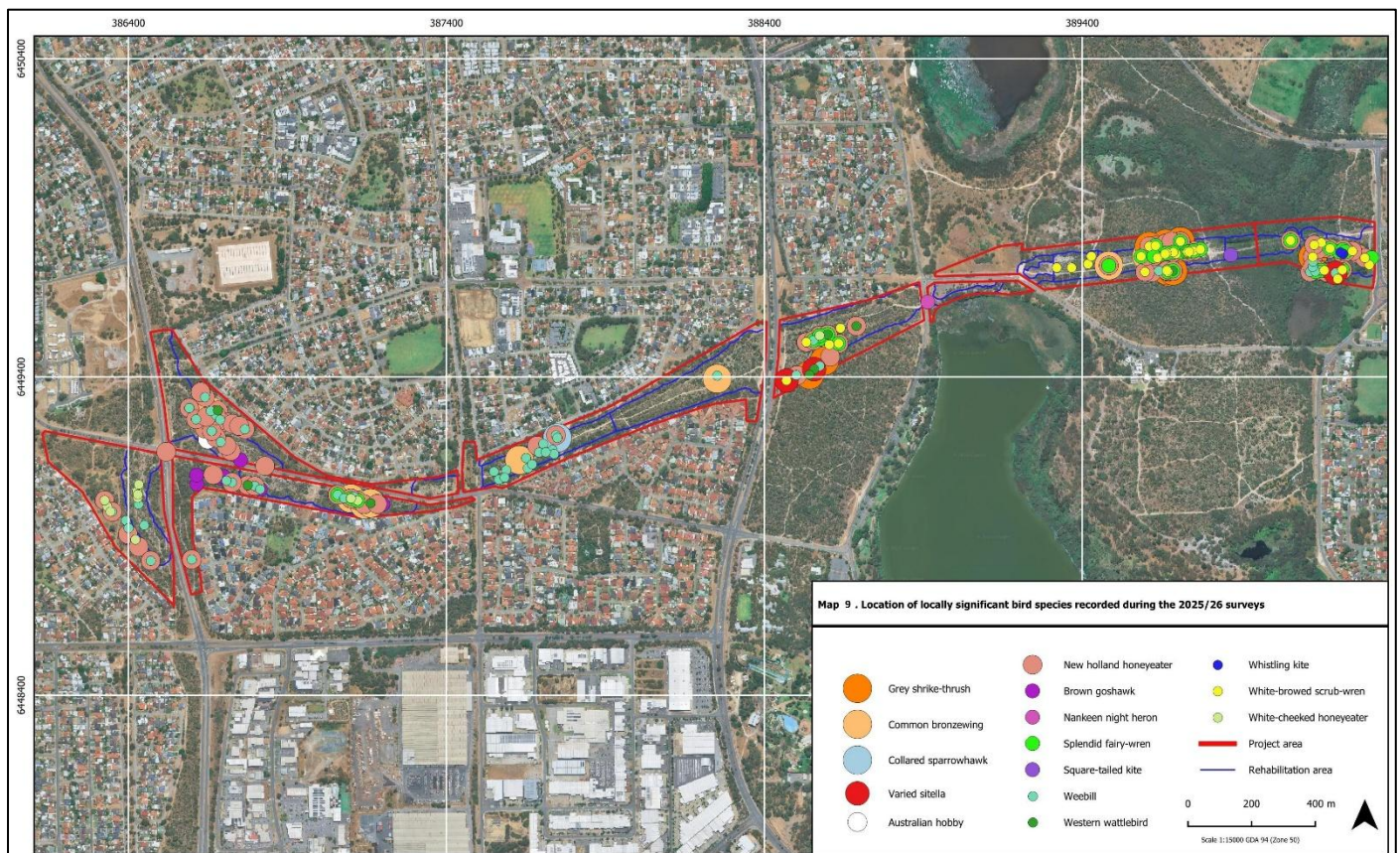
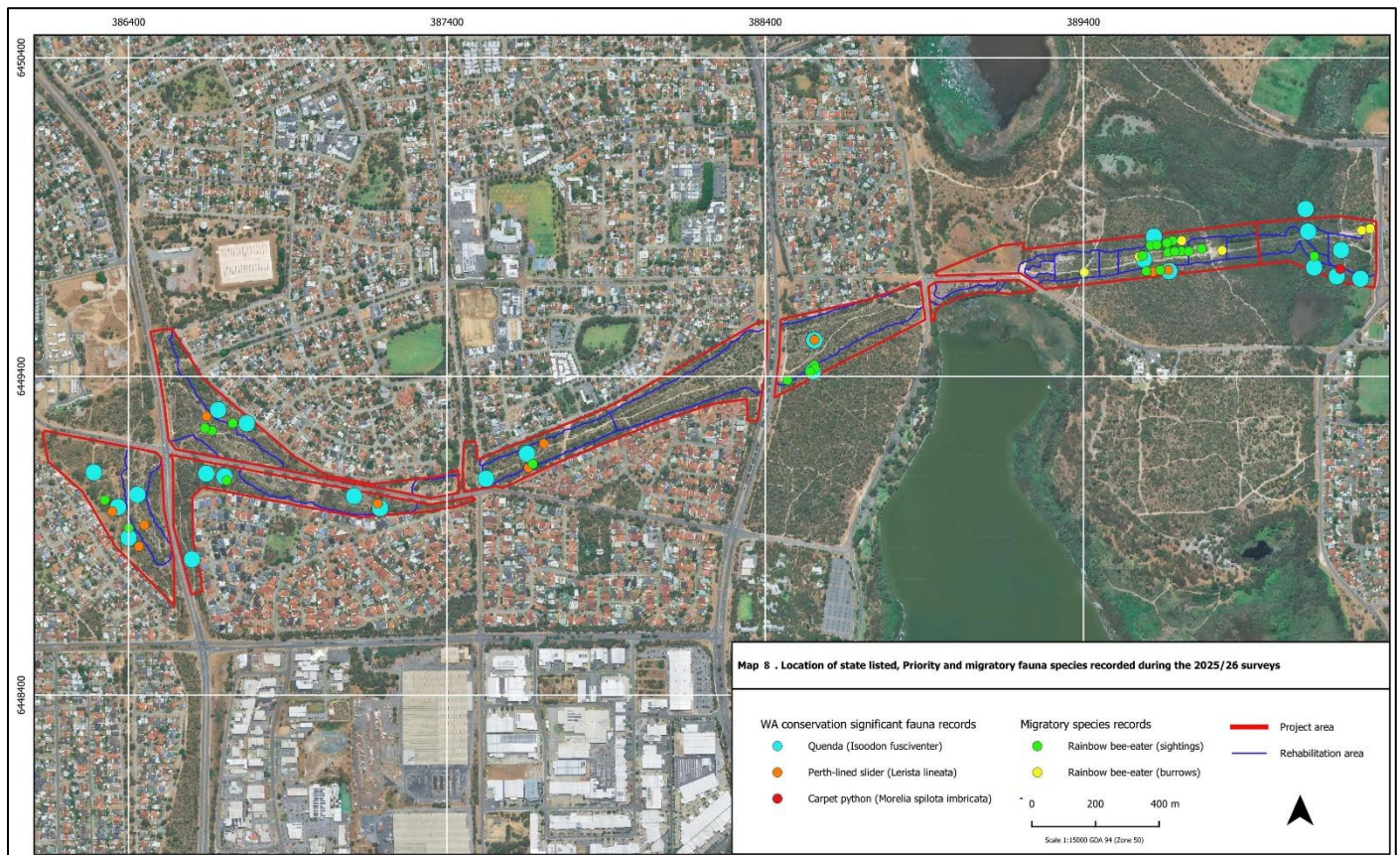
The detection of the carpet python within the study area is potentially of great significance. Carpet pythons have declined dramatically along the swan coastal plain (Bush et. al. 2010). There is however the chance that the shed skin found may belong to an escaped pet or released individual, however the skin was found in the Bibool management zone, which contains suitable habitat and resources to support carpet pythons including large-hollow bearing trees and logs, food sources such as possums, quenda, rabbits, rats and birds, as well as large areas of intact, semi-connected bushland. Other species are known to persist within the area of bushland including brush-tail possums and heath monitors, which have also declined elsewhere on the coastal plain. The skin has since been deposited in the Western Australian Museum and further examination, including potential genetic analysis may help to determine the origin (wild vs pet) of the individual.

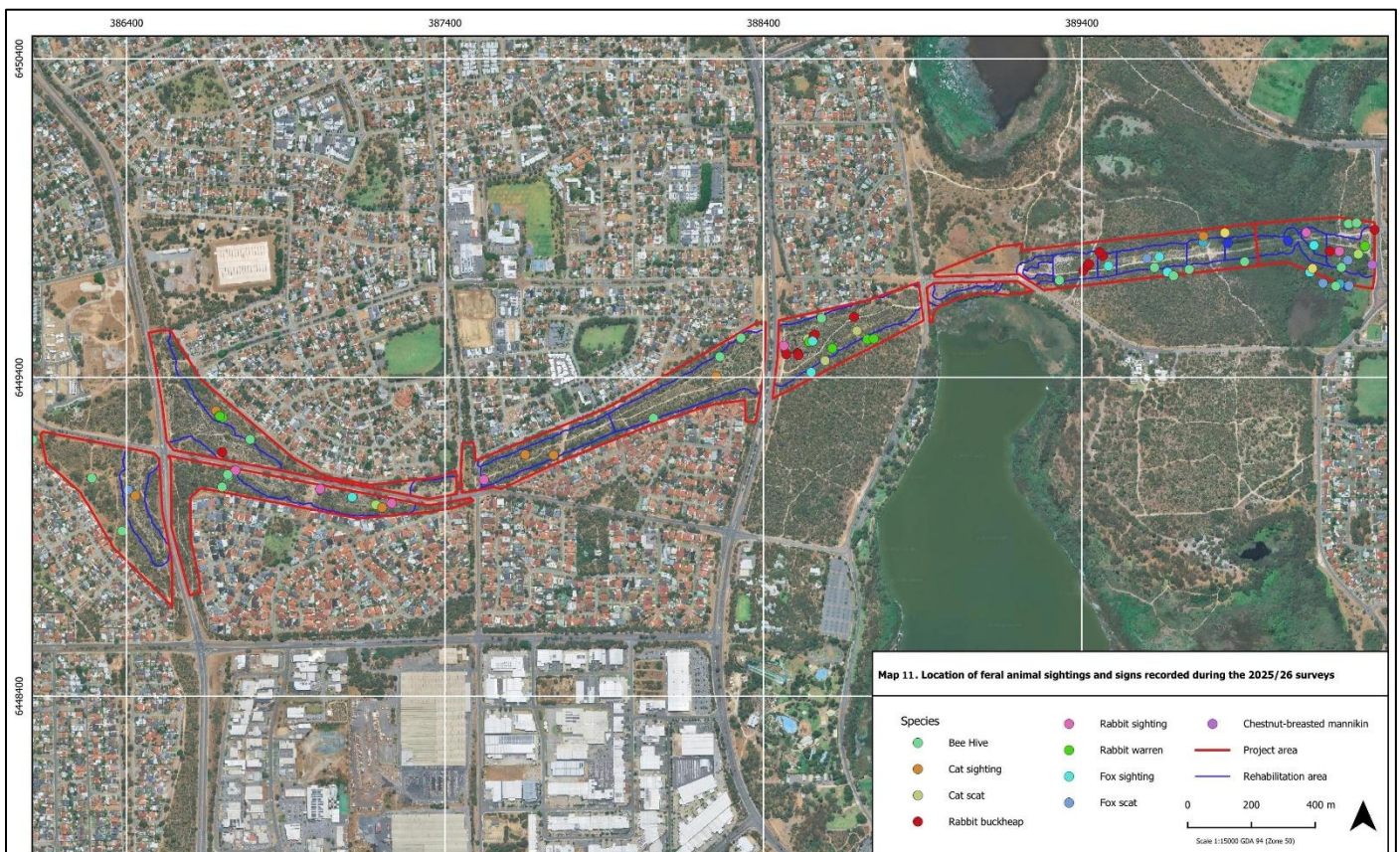
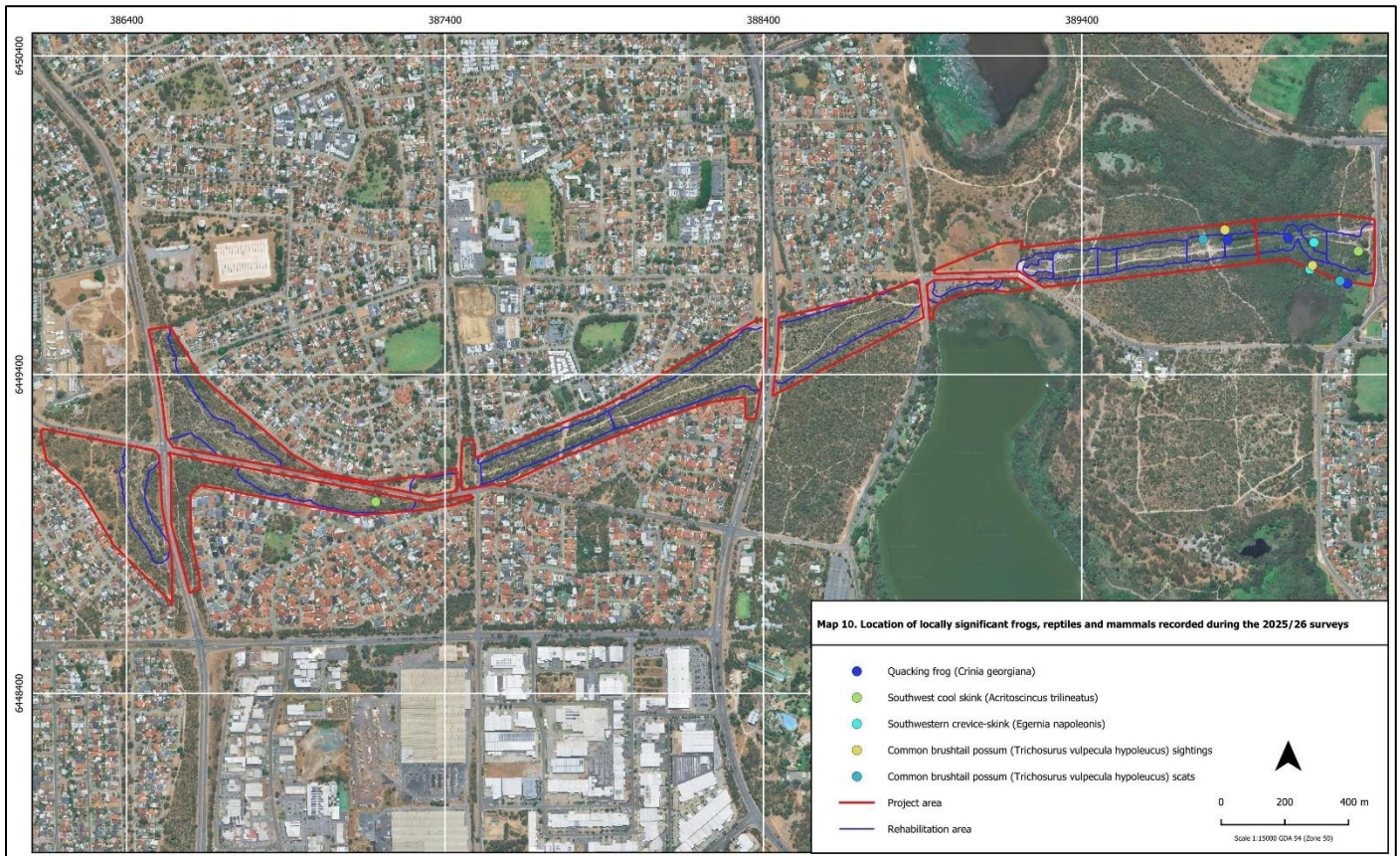
The possible tracks of the King skink may also be of importance. The status of the King skink in the immediate survey area is unknown, with no recent records from nearby or throughout the surrounding wetland/bushland habitats of the eastern Beeliar lake chain, with most records occurring in the western Beeliar lake chain such as Manning Lake, Lake Coogee and surrounds (FaunaTrack unpublished data). Other records are then mostly associated further north along the Canning and Swan Rivers and east of the Kwinana Freeway. King skinks may have also suffered a population decline along the SCP, and the intact (and suitable) habitats in the east of the study area may also support a population of the skink. Further searches of the area for both the Carpet python and King skink may be justified.

In addition, several trapdoor spiders were captured in pitfall traps during the survey (Figures 22 g & h). Although not representing the Priority 3 Swan Coastal Plain Shield-backed trapdoor spider (*Idiosoma sigillatum*), which is known from the vicinity of the study area (DBCA, 2025b), the presence of these two species may be of interest, as both are possibly undescribed species of Wishbone trapdoor spiders from the Perth region. The dark individual (*Aname* sp.) was captured on several occasions within the rehabilitated area of Karak, while the pale individual (*Proshermacha* sp.) was captured in the Moodjar and Bibool management zone in both reference and rehabilitation areas.



Figure 22. A shed skin (slough) of a South-west carpet python (*Morelia spilota imbricata*) detected within the reference area in the Bibool management zone (a-c); A small flock of Chestnut-breasted mannikins detected for the first time in the study area (d); Possible tracks in the sand from a King skink (*Egernia kingii*) in the Moodjar management zone (e); The remains of a Quenda found underneath powerlines within the exclusion fence of the Moodjar management zone (f); and Wishbone trapdoor spiders captured during pitfall trapping surveys (g) an *Aname* sp. and (h) *Proshermacha* sp.





3.4 Black cockatoo habitat

3.4.1 Habitat trees

Eighty-three potential habitat trees were located within the Tuart management zone, which included both suitable and future potential nesting trees (Table 20). Habitat trees identified within the Tuart management zone were mainly Tuart (*Eucalyptus gomphocephala*; 57 trees), Jarrah (*Eucalyptus marginata*; 20 trees), Marri (*Corymbia calophylla*; four trees), while further two unknown large *Eucalyptus* species were also identified as potential breeding habitat.

Twenty-five of the 83 trees identified in the Tuart management zone contained visible hollows, with only seven of these supporting hollows of greater than 10 cm wide which are considered suitable breeding habitat for black cockatoo species (i.e. Figure 23). Of these however, four hollows were occupied by nest competitors (bees, lorikeets, corellas and/or galahs; i.e. Figure 25). It is also of note that not all hollows or potential hollows are visible from the ground and there are many large trees present within the study area that may also contain hollows, potentially suitable for black cockatoo species.

In addition, all trees bearing large, potential suitable breeding hollows identified in the Tuart management zone and the remainder of the Roe8 corridor previously highlighted in BCE (2020), were inspected with inspection camera. Hollow inspections were undertaken over five days on the 21st and 22nd November 2025, and 5th, 6th and 12th February 2026. Of the hollows that were inspected, 19 were occupied by bees, 12 by Rainbow lorikeets, five by Galahs and three by Corellas (Little and Long billed). In addition, two observations were made of RTBC prospecting a hollow in the Tuart and Karak management zone, though no further evidence or observations of breeding activity were made. A cracked eggshell was also observed in a large hollow in the Tuart management zone, but was unable to be identified (Figure 24).

No known breeding hollows are known to occur within the project area, and there were no hollows currently being used by black cockatoos during the survey. It is unlikely that White-tailed cockatoos will use the project area for breeding, with the species rarely using the southern Perth metropolitan area of the Swan Coastal Plain as breeding locations (Johnstone et. al. 2011). However, the Forest red-tailed black cockatoo has been known to breed on the Swan Coastal Plain (including within the City of Cockburn), with known breeding locations in the vicinity of Murdoch University and possibly Perry Lakes (Johnstone et. al. 2017) and Bibra Lake (Birdlife, 2025a).

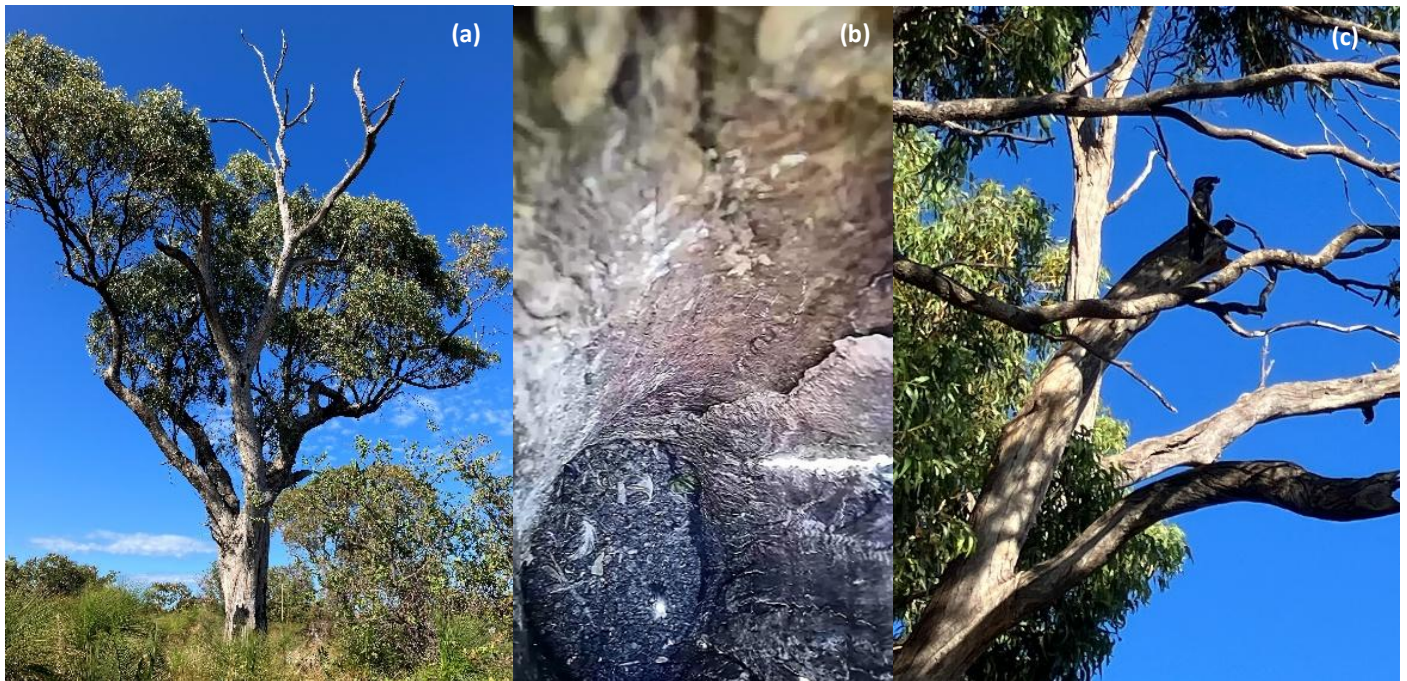


Figure 23. A large Tuart (Tree #39) within the Tuart management zone containing hollows of potential breeding suitability for black cockatoos (a); Example of a large (20cm wide) hollow containing feathers of an unknown species (b); A pair of Forest red-tailed black cockatoos prospecting a hollow.



Figure 25. A large Tuart (Tree #6) within the Tuart management zone containing large hollows (a), one containing Eastern long-billed corella fledglings (b).



Figure 26. A large Tuart (Tree #183) within the Quenda management zone (a) containing a large, potentially suitable breeding hollow for black cockatoos.



Figure 27. (a) A very large Jarrah in the Bibool management zone (possibly the largest tree in the study area, Tree #365) containing potentially suitable breeding hollows for black cockatoos.

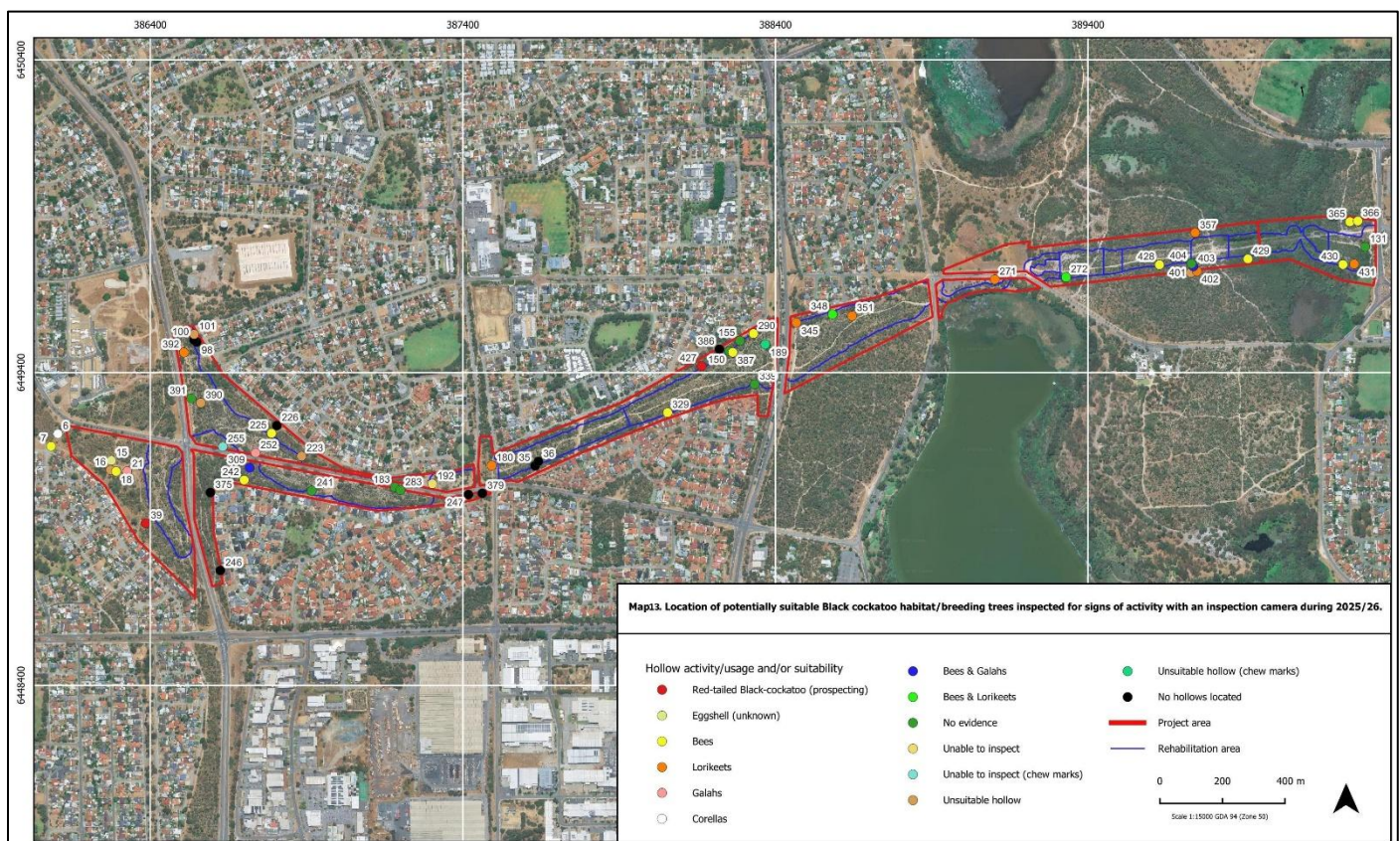
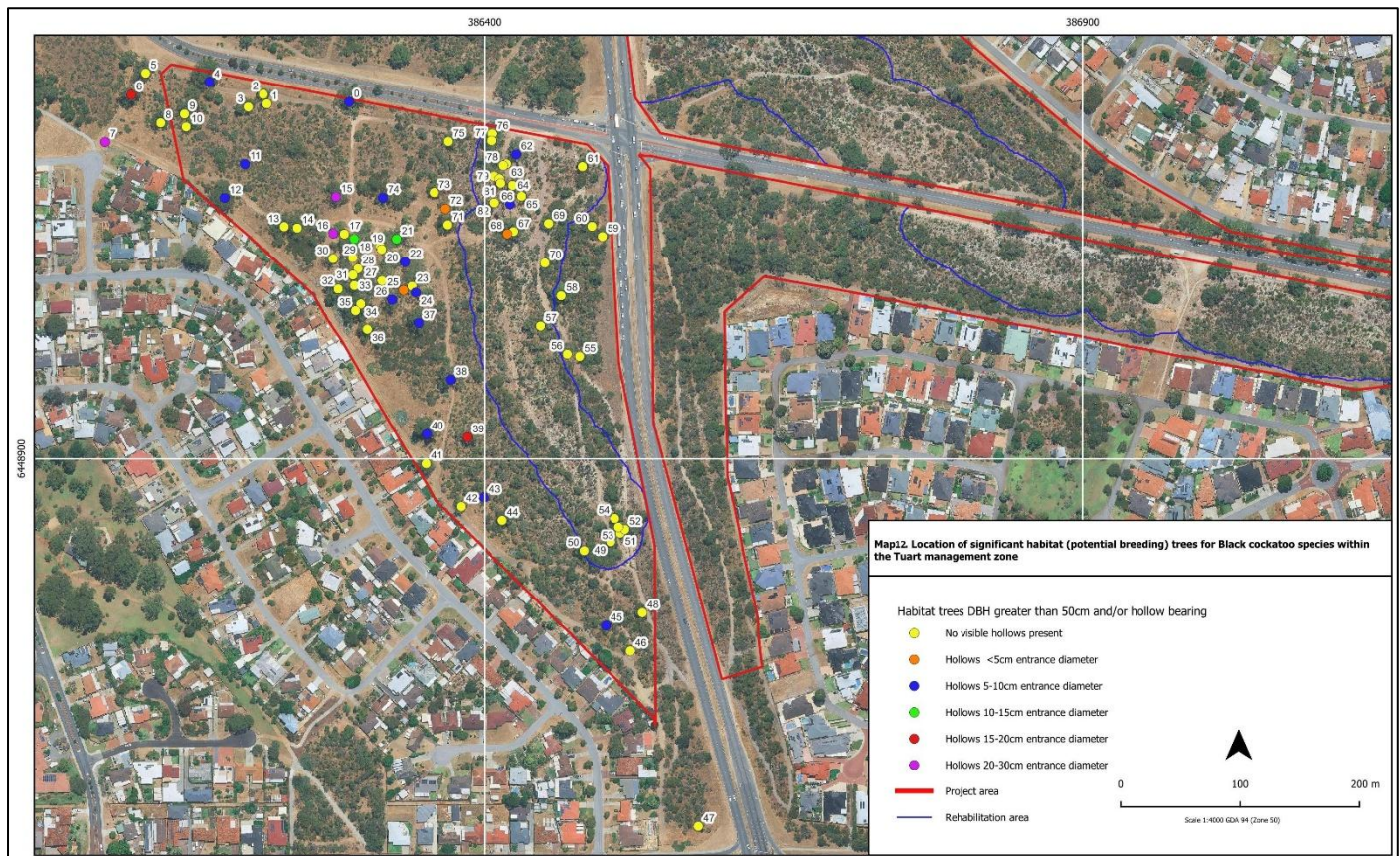


Table 20. Details of all trees with a DBH > 50cm and/or hollow-bearing within the Tuart management zone.

Number	Species	Lat	Long	Dead/ Alive	DBH (cm)	# Hollows	Hollow Width (cm)	Evidence of use	Comments
0	<i>Eucalyptus gomphocephala</i>	-32.087788	115.795003		93	1-5	5-10	Bees	Bees only occupying one hollow
1	<i>Eucalyptus gomphocephala</i>	-32.087795	115.794275		80				Beehive in base of tree, but not in a hollow
2	<i>Eucalyptus marginata</i>	-32.087723	115.794243		62				
3	<i>Eucalyptus marginata</i>	-32.087817	115.794108		52				
4	<i>Eucalyptus gomphocephala</i>	-32.087625	115.793767		>100	1	10		Chew marks at hollow
5	<i>Eucalyptus gomphocephala</i>	-32.087553	115.793203		>100				
6	<i>Eucalyptus gomphocephala</i>	-32.087715	115.793075		>100	5-10	10-20	Bees	Suitable hollow situated on main trunk
7	<i>Eucalyptus/Corymbia</i> sp.	-32.08807	115.792838		>100	5-10	10-30		Suitable hollow situated on main trunk
8	<i>Eucalyptus gomphocephala</i>	-32.08793	115.793332		54				
9	<i>Eucalyptus gomphocephala</i>	-32.087865	115.793543		64				
10	<i>Eucalyptus marginata</i>	-32.087962	115.793557		78				
11	<i>Eucalyptus/Corymbia</i> sp.	-32.088247	115.794073		56	1-5	5-10		
12	<i>Eucalyptus gomphocephala</i>	-32.0885	115.79389		>100	1-5	5-10		Chew marks on one hollow
13	<i>Eucalyptus gomphocephala</i>	-32.088722	115.794417		56				
14	<i>Eucalyptus gomphocephala</i>	-32.088733	115.794532		77				
15	<i>Eucalyptus gomphocephala</i>	-32.088502	115.794878		>100	1-5	10-25	Lorikeet	Largest hollow situated on a spout
16	<i>Eucalyptus gomphocephala</i>	-32.088778	115.79485		95	1-5	10-30		Largest hollow on top of main trunk
17	<i>Eucalyptus gomphocephala</i>	-32.088783	115.794948		86				Main trunk dead and snapped off
18	<i>Eucalyptus gomphocephala</i>	-32.08882	115.795035		90	1-5	10-15	Galah & Bees	Chew marks on large hollow with Galahs. Bees in smaller hollow
19	<i>Eucalyptus gomphocephala</i>	-32.08888	115.795265		50				
20	<i>Eucalyptus gomphocephala</i>	-32.088902	115.795277		56				
21	<i>Eucalyptus gomphocephala</i>	-32.088825	115.79541		94	1-5	10-15		Chew marks on some hollows. A narrow vertical slit & some smaller hollows
22	<i>Eucalyptus gomphocephala</i>	-32.088998	115.795483		>100	1-5	10	Lorikeets & Bees	
23	<i>Eucalyptus gomphocephala</i>	-32.089182	115.795542		55				
24	<i>Eucalyptus gomphocephala</i>	-32.08923	115.795575		70	2	5-10		
25	<i>Eucalyptus gomphocephala</i>	-32.089212	115.795467		66	1	2		
26	<i>Eucalyptus gomphocephala</i>	-32.089282	115.795365		>100	2	10		
27	<i>Eucalyptus gomphocephala</i>	-32.089138	115.795277		60				
28	<i>Eucalyptus gomphocephala</i>	-32.089045	115.795065		54				
29	<i>Eucalyptus gomphocephala</i>	-32.088963	115.79502		57				

Number	Species	Lat	Long	Dead/ Alive	DBH (cm)	# Hollows	Hollow Width (cm)	Evidence of use	Comments
30	<i>Eucalyptus gomphocephala</i>	-32.088968	115.794847		70				
31	<i>Eucalyptus gomphocephala</i>	-32.089092	115.79502		56				
32	<i>Eucalyptus gomphocephala</i>	-32.089197	115.794888		>100				
33	<i>Eucalyptus gomphocephala</i>	-32.089172	115.795032		74				
34	<i>Eucalyptus gomphocephala</i>	-32.089312	115.795087		84				
35	<i>Eucalyptus gomphocephala</i>	-32.089362	115.79504		>100				
36	<i>Eucalyptus gomphocephala</i>	-32.089503	115.795142		65				
37	<i>Eucalyptus gomphocephala</i>	-32.08946	115.795598		89	1-5	5-10	Bees	Old chew marks in one hollow
38	<i>Eucalyptus gomphocephala</i>	-32.08989	115.79588		>100	1	5-10		Bees at base of tree, but not in hollow
39	<i>Eucalyptus gomphocephala</i>	-32.090325	115.796022		>100	10-20	10-20	Corella, Lorikeet & Bees	Corella nesting in large hollow in spout. Bees in another. Several large hollows on main trunk and lots of chew marks. Red-tailed black-cockatoos observed prospecting a large hollow on main trunk
40	<i>Eucalyptus gomphocephala</i>	-32.090297	115.79566		>100	10	10	Bees	
41	<i>Eucalyptus gomphocephala</i>	-32.090522	115.79565		56				
42	<i>Eucalyptus marginata</i>	-32.090847	115.79596		62				
43	<i>Eucalyptus marginata</i>	-32.09078	115.79616		>100	5-10	5-10		Chew marks
44	<i>Eucalyptus gomphocephala</i>	-32.090955	115.796317		56				
45	<i>Eucalyptus marginata</i>	-32.091757	115.797228		93	1-5	5-10		
46	<i>Eucalyptus marginata</i>	-32.09195	115.797443		56				
47	<i>Eucalyptus marginata</i>	-32.093278	115.798027		67				
48	<i>Eucalyptus marginata</i>	-32.091663	115.797553		54				
49	<i>Corymbia calophylla</i>	-32.091125	115.797278		68				
50	<i>Corymbia calophylla</i>	-32.09119	115.797042		78				Bees at base of tree
51	<i>Eucalyptus gomphocephala</i>	-32.09106	115.797365		90				
52	<i>Eucalyptus gomphocephala</i>	-32.091033	115.797405		56				
53	<i>Corymbia calophylla</i>	-32.091015	115.79735		51				
54	<i>Corymbia calophylla</i>	-32.09095	115.797317		67				
55	<i>Eucalyptus marginata</i>	-32.089725	115.79702		55				
56	<i>Eucalyptus marginata</i>	-32.089707	115.796912		67				
57	<i>Eucalyptus marginata</i>	-32.089493	115.796678		61				
58	<i>Eucalyptus gomphocephala</i>	-32.089267	115.796863		74				

Number	Species	Lat	Long	Dead/ Alive	DBH (cm)	# Hollows	Hollow Width (cm)	Evidence of use	Comments
59	<i>Eucalyptus marginata</i>	-32.088823	115.797235		53				
60	<i>Eucalyptus marginata</i>	-32.088745	115.797143		50				
61	<i>Eucalyptus marginata</i>	-32.088295	115.797065		60				
62	<i>Eucalyptus gomphocephala</i>	-32.088197	115.79648		72	1	5-10	Lorikeet	Possibly contains chicks
63	<i>Eucalyptus marginata</i>	-32.088268	115.796392		72				
64	<i>Eucalyptus gomphocephala</i>	-32.08843	115.796445		62				
65	<i>Eucalyptus gomphocephala</i>	-32.088513	115.796522		50				
66	<i>Eucalyptus gomphocephala</i>	-32.088573	115.79642		68	2	10	Galah	Galah in a hollow ~5x15cm slit, but too small for black cockatoos
67	<i>Eucalyptus gomphocephala</i>	-32.088778	115.796447		89				
68	<i>Eucalyptus gomphocephala</i>	-32.088795	115.796392		80	1-5	<5		Chew marks
69	<i>Eucalyptus marginata</i>	-32.08872	115.79676		51				2 x pardalote nest boxes
70	<i>Eucalyptus marginata</i>	-32.089018	115.796722		50				
71	<i>Eucalyptus gomphocephala</i>	-32.088722	115.795867		74				
72	<i>Eucalyptus gomphocephala</i>	-32.0886	115.795848		56	1-5	<5		
73	<i>Eucalyptus marginata</i>	-32.088478	115.795748		76				
74	<i>Eucalyptus gomphocephala</i>	-32.088512	115.795293		83	1-5	5-10		
75	<i>Eucalyptus marginata</i>	-32.088095	115.79588		56				
76	<i>Eucalyptus gomphocephala</i>	-32.08804	115.79627		64				
77	<i>Eucalyptus gomphocephala</i>	-32.088092	115.796265		82				
78	<i>Eucalyptus gomphocephala</i>	-32.08828	115.796363		63				
79	<i>Eucalyptus gomphocephala</i>	-32.08836	115.79628		66				
80	<i>Eucalyptus gomphocephala</i>	-32.08838	115.796328		50				
81	<i>Eucalyptus gomphocephala</i>	-32.088413	115.796338		55				
82	<i>Eucalyptus gomphocephala</i>	-32.08856	115.79628		61				

Table 21. Details of all potentially suitable breeding trees initially highlighted by BCE (2020) or the current survey (Tuart management zone) which were inspected with a camera to determine presence of hollows, suitability and/or usage.

Number	Zone	Date	Species	Lat	Long	Evidence of use	Comments
39	Tuart	2025	<i>Eucalyptus gomphocephala</i>	-32.090325	115.796022	Bees, Lorikeets & Corellas nesting. Boobook owls observed in tree at dusk	Lots of Lorikeet activity. Hollows not inspected
39	Tuart	2026	<i>Eucalyptus gomphocephala</i>	-32.090325	115.796022	Feathers. RTBC observed prospecting on the 8/2	Active bee hive
21	Tuart	2025	<i>Eucalyptus gomphocephala</i>	-32.088825	115.79541	Galah at hollow	Hollow too high to inspect
18	Tuart	2025	<i>Eucalyptus gomphocephala</i>	-32.08882	115.795035	Galah emerged from hollow	Lorikeets extremely agitated and hollows not inspected
18	Tuart	2026	<i>Eucalyptus gomphocephala</i>	-32.08882	115.795035	Small hollows, bees in one	
16	Tuart	2025	<i>Eucalyptus gomphocephala</i>	-32.088778	115.79485	No good. Old and light protruding through it	
16	Tuart	2026	<i>Eucalyptus gomphocephala</i>	-32.088778	115.79485	No good. Old and light protruding through it	
15	Tuart	2025	<i>Eucalyptus gomphocephala</i>	-32.088502	115.794878	Single egg, no birds	Deep hollow on spout
15	Tuart	2026	<i>Eucalyptus gomphocephala</i>	-32.088502	115.794878		Old egg still present
7	Tuart	2025	<i>Eucalyptus/Corymbia</i> sp.	-32.08807	115.792838	No evidence	
7	Tuart	2026	<i>Eucalyptus/Corymbia</i> sp.	-32.08807	115.792838	Bees in one hollow	
6	Tuart	2025	<i>Eucalyptus gomphocephala</i>	-32.087715	115.793075	Two Corellas in one, old bee hive in another	
6	Tuart	2026	<i>Eucalyptus gomphocephala</i>	-32.087715	115.793075	No evidence	
242	Quenda	2025	<i>Eucalyptus gomphocephala</i>	-32.08911	115.79937	No evidence in large, shallow hollow. Bees in narrow slit	Smaller hollows not inspected
242	Quenda	2026	<i>Eucalyptus gomphocephala</i>	-32.08911	115.79937	Bees in slit and smaller hollow	
246	Quenda	2025	<i>Eucalyptus gomphocephala</i>	-32.09171	115.79853		No hollows present
375	Quenda	2025	<i>Eucalyptus marginata</i>	-32.08946	115.79822		No hollows present
309	Quenda	2025	<i>Eucalyptus marginata</i>	-32.08876	115.79956	Bees in small hollow. Cobwebs and old bee hive in larger hollows	Smaller hollows not inspected
309	Quenda	2026	<i>Eucalyptus marginata</i>	-32.08876	115.79956	Bees & galahs	
241	Quenda	2025	<i>Eucalyptus gomphocephala</i>	-32.08944	115.80166	No evidence	Shallow, open top hollows
223	Biyara	2025	<i>Eucalyptus gomphocephala</i>	-32.08844	115.80133	No evidence	Small hollow in low fork and spout. Difficult to inspect
223	Biyara	2026	<i>Eucalyptus gomphocephala</i>	-32.08844	115.80133		Hollow not suitable
226	Biyara	2025	<i>Eucalyptus gomphocephala</i>	-32.08755	115.8005		No hollows present
225	Biyara	2025	<i>Eucalyptus gomphocephala</i>	-32.08777	115.80032	Bees in smaller hollow	Hollow too high to inspect
225	Biyara	2026	<i>Eucalyptus gomphocephala</i>	-32.08777	115.80032	No evidence	
252	Biyara	2025	<i>Eucalyptus gomphocephala</i>	-32.08833	115.79977	No evidence in large hollows. Pair of galahs in smaller, higher up hollow	Several large hollows difficult to inspect
252	Biyara	2026	<i>Eucalyptus gomphocephala</i>	-32.08833	115.79977	Lorikeets in hollows high up and corellas	
255	Biyara	2025	<i>Eucalyptus gomphocephala</i>	-32.08814	115.79866	Recent chew marks	Hollow too high to inspect. Close to road
391	Biyara	2025	<i>Eucalyptus marginata</i>	-32.08674	115.79761	No evidence	

Number	Zone	Date	Species	Lat	Long	Evidence of use	Comments
392	Biyara	2025	<i>Eucalyptus marginata</i>	-32.08541	115.79738	No evidence. Lorikeets in smaller hollows	Large hollow difficult to inspect
390	Biyara	2025	<i>Eucalyptus marginata</i>	-32.08687	115.79793		Shallow hollow in main trunk and another on top
100	Biyara	2025	<i>Corymbia calophylla</i>	-32.08505	115.79772		Could not locate hollow
101	Biyara	2025	<i>Corymbia calophylla</i>	-32.08489	115.79773	No evidence	Low hollow extending upwards
98	Biyara	2025	<i>Corymbia calophylla</i>	-32.08511	115.79781		No hollows present
183	Quenda	2026	<i>Eucalyptus gomphocephala</i>	-32.08937	115.80448	No evidence	Very deep, highly suitable hollow
183	Quenda	2025	<i>Eucalyptus gomphocephala</i>	-32.08937	115.80448	No evidence	
283	Quenda	2025	<i>Eucalyptus marginata</i>	-32.08945	115.80466	No evidence. Cobwebs in one hollow	Deep hollow
247	Quenda	2025	<i>Eucalyptus gomphocephala</i>	-32.0896	115.80697		Could not locate hollow
379	Quenda	2025	<i>Eucalyptus marginata</i>	-32.08957	115.80744		No hollows present
192	Quenda	2025	<i>Eucalyptus gomphocephala</i>	-32.08928	115.80575		Difficult to inspect
36	Karak	2025	<i>Corymbia calophylla</i>	-32.08867	115.80935		Could not locate hollow
36	Karak	2026	<i>Corymbia calophylla</i>	-32.08867	115.80935		No hollows
35	Karak	2025	<i>Corymbia calophylla</i>	-32.08879	115.80924		Could not locate hollow
35	Karak	2026	<i>Corymbia calophylla</i>	-32.08879	115.80924		No hollows
427	Karak	2025	<i>Eucalyptus sp.</i>	-32.08597	115.81492	3 hollows inspected. 2 RTBC prospecting, one flew from rim of hollow. Galah in tree	RTBC hanging around the tree
427	Karak	2026	<i>Eucalyptus sp.</i>	-32.08597	115.81492	No evidence	
386	Karak	2025	<i>Eucalyptus marginata</i>	-32.08549	115.81553		No hollows present
386	Karak	2026	<i>Eucalyptus marginata</i>	-32.08549	115.81553	No hollow	Sawn off at top
387	Karak	2025	<i>Eucalyptus marginata</i>	-32.08558	115.81598	All hollows contained bees	
387	Karak	2026	<i>Eucalyptus marginata</i>	-32.08558	115.81598	Bees still in all hollows	
155	Karak	2025	<i>Corymbia calophylla</i>	-32.08525	115.81623	No evidence in spout	No hollow at top
155	Karak	2026	<i>Corymbia calophylla</i>	-32.08525	115.81623	Lorikeets in spout	
290	Karak	2025	<i>Eucalyptus marginata</i>	-32.08505	115.81669	Recent chew marks at small hollow. Bees, lorikeets galahs in other hollows	
290	Karak	2026	<i>Eucalyptus marginata</i>	-32.08505	115.81669	Bees in largest hollow	
189	Karak	2025	<i>Eucalyptus gomphocephala</i>	-32.08536	115.81709	Recent chew marks	Dense foliage prevented inspection
189	Karak	2026	<i>Eucalyptus gomphocephala</i>	-32.08536	115.81709	Hollow too small <10cm	
329	Karak	2025	<i>Eucalyptus marginata</i>	-32.0873	115.81375		
329	Karak	2026	<i>Eucalyptus marginata</i>	-32.0873	115.81375	No evidence. Bees in one hollow	
339	Karak	2025	<i>Eucalyptus marginata</i>	-32.08651	115.81671	No evidence	Large hollow in dead branch

Number	Zone	Date	Species	Lat	Long	Evidence of use	Comments
339	Karak	2026	<i>Eucalyptus marginata</i>	-32.08651	115.81671	No evidence	
150	Karak	2025	<i>Corymbia calophylla</i>	-32.08555	115.81587	No evidence	
180	Karak	2025	<i>Eucalyptus gomphocephala</i>	-32.08877	115.80777	Lorikeets	Very small hollow
345	Djara	2025	<i>Eucalyptus marginata</i>	-32.08475	115.81815	Lorikeets at hollow	
345	Djara	2026	<i>Eucalyptus marginata</i>	-32.08475	115.81815	Large hollow at top	
348	Djara	2025	<i>Eucalyptus marginata</i>	-32.08452	115.81938	Lorikeets. 3 x RTBC in tree	No large hollows, several small hollows in spout
348	Djara	2026	<i>Eucalyptus marginata</i>	-32.08452	115.81938	Bees	
351	Djara	2025	<i>Eucalyptus marginata</i>	-32.08457	115.82004	Lorikeets in smaller hollow	
351	Djara	2026	<i>Eucalyptus marginata</i>	-32.08457	115.82004	No evidence	
231	Moodjar	2025	<i>Eucalyptus gomphocephala</i>	-32.08356	115.82489	Lorikeets in small hollow at the top	
272	Moodjar	2025	<i>Eucalyptus gomphocephala</i>	-32.08352	115.82731	Bees and Lorikeets	
428	Moodjar	2025	<i>Eucalyptus sp.</i>	-32.08319	115.83048	No evidence in large hollows. Bees in one	
400	Moodjar	2025	<i>Eucalyptus marginata</i>	-32.08343	115.83111	Bees in smaller hollow	Large vertical shoot
401	Moodjar	2025	<i>Eucalyptus marginata</i>	-32.08343	115.83154		Shoot at top of trunk, but no functional hollow
402	Moodjar	2025	<i>Eucalyptus marginata</i>	-32.08339	115.83175	Lorikeets in tree	No large hollows, a few smaller ones
403	Moodjar	2025	<i>Eucalyptus marginata</i>	-32.08325	115.83163	Bees. Galahs in tree	Large vertical shoot in spout
357	Moodjar	2025	<i>Eucalyptus marginata</i>	-32.08228	115.8317	Lorikeets in tree	No obvious hollows
429	Bibool	2025	<i>Eucalyptus sp.</i>	-32.08305	115.83348	Bees in smaller hollow. Galahs in tree	Large vertical shoot
365	Bibool	2025	<i>Eucalyptus marginata</i>	-32.08201	115.83695	Bees in several smaller hollows	Suitable hollows in main trunk
365	Bibool	2026	<i>Eucalyptus marginata</i>	-32.08201	115.83695	No activity	
366	Bibool	2025	<i>Eucalyptus marginata</i>	-32.08199	115.83722	Bees in smaller hollow	No suitable large hollows
366	Bibool	2026	<i>Eucalyptus marginata</i>	-32.08199	115.83722	No evidence	
131	Bibool	2025	<i>Corymbia calophylla</i>	-32.08274	115.83746		Large shoot in spout & several smaller hollows
431	Bibool	2025	<i>Eucalyptus sp.</i>	-32.08323	115.83708	Lorikeets and Striated Pardalote	Hollows in trunk and spout
430	Bibool	2025	<i>Eucalyptus sp.</i>	-32.08324	115.8367	Bees	One large hollow in trunk and some on spouts
404	Bibool	2025	<i>Eucalyptus marginata</i>	-32.08317	115.83157		Shallow hollow in main trunk and a smaller hollow

3.4.2 Roosting habitat

Much of the tall tree habitats within the buffer/uncleared areas of the corridor may be suitable as night roosting habitat for black-cockatoo species, however the rehabilitated areas do not contain any tall trees capable of providing any night roosting habitat.

A single potential roosting location was recorded within proximity to the project area, with a small group of Forest red-tailed black cockatoos disturbed adjacent to the Djara management zone. A residential property on Madeleine Court in North Lake, which backs onto North Lake Road contains several large Tuarts (Figure 28). The small group of birds were disturbed (but not flushed) approximately 30 minutes after last light during spotlighting searches of the Djara management zone. No confirmed roosts are currently known from within the project area, however an unconfirmed roost exists in the Quenda management zone (Map 14). However, two known Forest red-tailed black cockatoo roosts occur within 200m of the Karak management zone at Elinor Reserve and Rinaldo Reserve. While White-tailed black cockatoos also roost in Rinaldo Reserve, and a roost also occurs within 350m of the Quenda/Karak management zones at Tempest Park, with a further unconfirmed roost occurs within 300m metres of the Bibool management zone at Meller Park (DBCA, 2025a; Birdlife, 2025a).

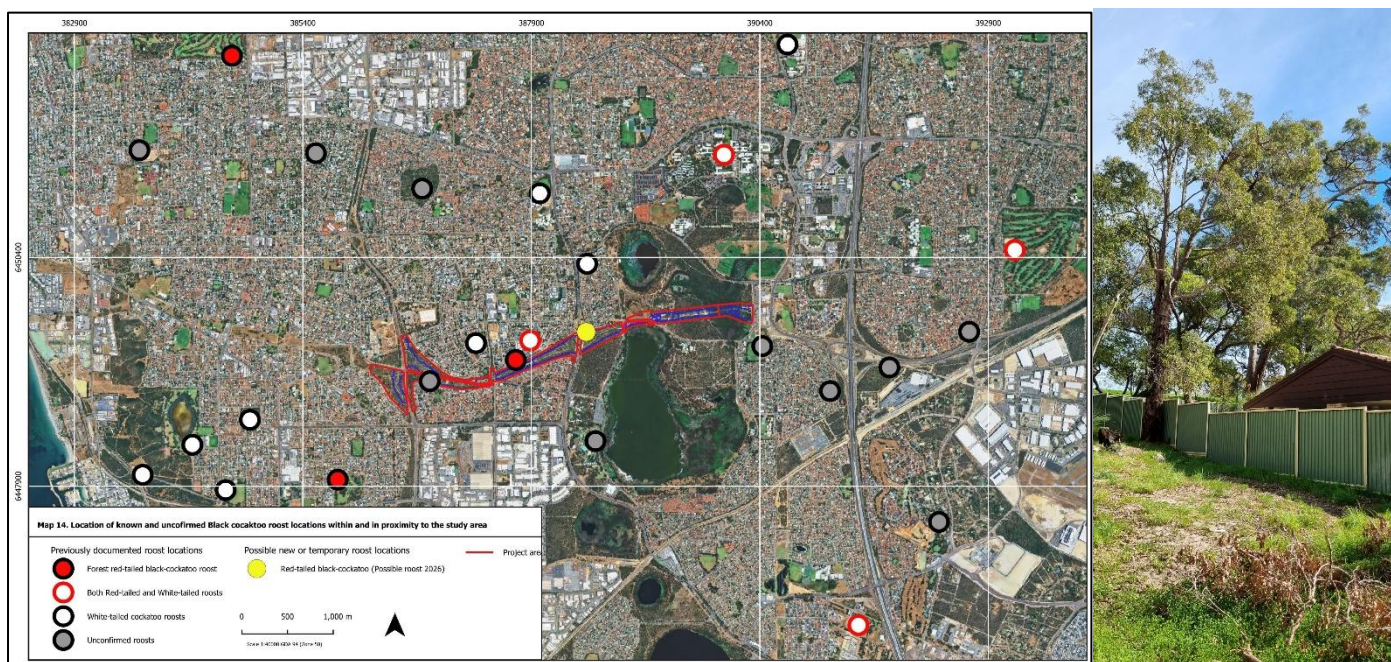


Figure 28. A group of large Eucalypts in private property adjacent to the Djara management zone where a small number of Forest red-tailed black cockatoos were disturbed (but not flushed) in the early evening, assumed to be roosting.

3.4.3 Foraging habitat

The study area supports suitable foraging habitat for both Black-cockatoo species. Bamford Consulting Ecologists (2020) summarised the main areas of suitable foraging habitat for both Red-tailed and Carnaby's black cockatoos throughout the study area, using methods developed by Bamford Consulting Ecologists (see BCE, 2020). Those areas highlighted by BCE (2020) included areas predominantly containing *Banksia* and Eucalypt habitats as moderate to high foraging value and the wetland-woodland habitats were of low to moderate foraging value, while the rehabilitated areas were assessed as young and of low foraging potential. Rehabilitation throughout the corridor as of the current survey is still relatively young, with varying levels of foraging suitability, however the identification of foraging signs throughout much of the study area identify areas of high foraging activity in several management zones (including rehabilitation areas), with few observations from the wet-forest habitats of Bibool (Map 15).

Carnaby's cockatoos were occasionally observed foraging or foraging evidence detected, which were mainly observed foraging in the Tuart, Biyara, Quenda and Moodjar management zones, with foraging evidence and feeding observations predominantly occurring in the reference areas of Tuart and Biyara, with foraging observed on Tuart (*Eucalyptus gomphocephala*) and Candlestick Banksia (*Banksia attenuata*). While evidence of Carnaby's feeding in rehabilitation areas was also observed in the Tuart management zones (*Banksia sessilis*), Quenda, Djara and Moodjar management zones, where foraging evidence was observed of *Banksia attenuata* and *Banksia menziesii*.

Forest red-tailed black cockatoos were much more readily observed foraging and/or evidence of foraging throughout the corridor, with extensive foraging signs observed throughout all management zones. Foraging evidence was predominantly observed in the Karak and Djara management zones, with high levels of foraging activity in both the reference and rehabilitation areas. The relatively high percentage cover of Marri (*Corymbia calophylla*) in these areas, particularly in the rehabilitation areas has provided ample foraging resources. Isolated foraging evidence was also observed on Marri in the Biyara, Quenda and Moodjar rehabilitation areas.

Bamford Consulting Ecologists (2020) reported that foraging for both species of black cockatoo is likely to be limited to areas of remnant vegetation along the corridor. Results found during the current survey have shown that both species (particularly RTBC) are foraging in the rehabilitated areas, especially on Marri, which have since resprouted/coppiced from ancient trees cleared previously. These trees are now producing copious amounts of nuts in some areas, providing abundant food resources for species such as the RTBC.

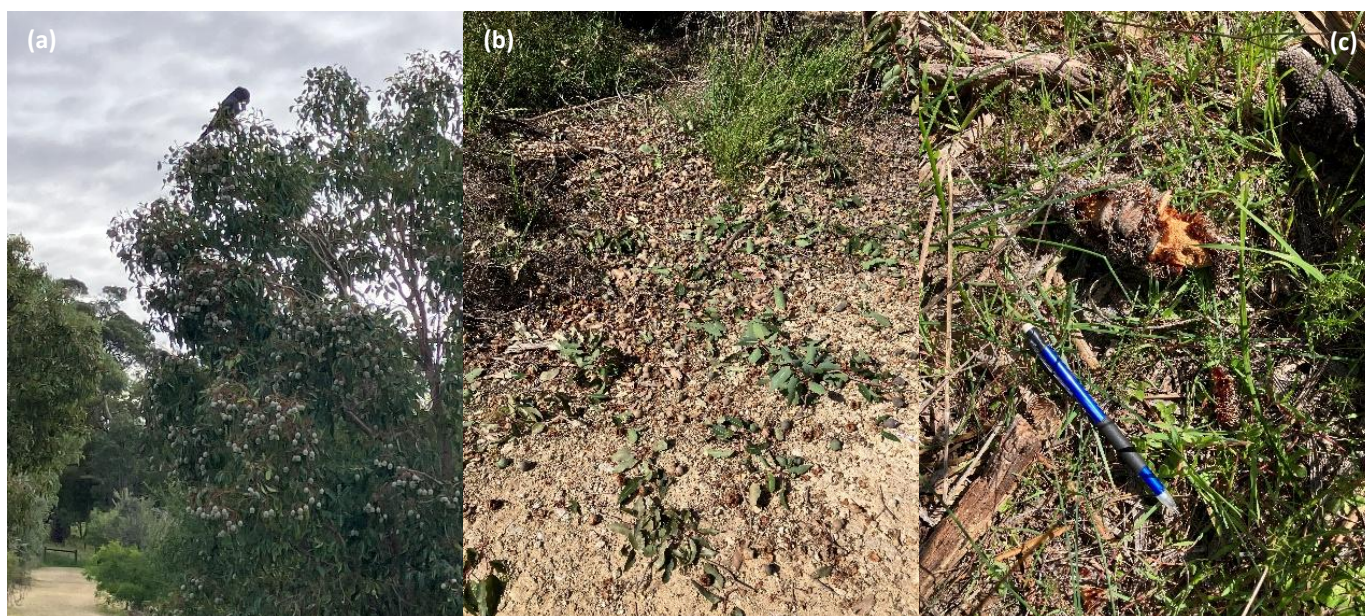
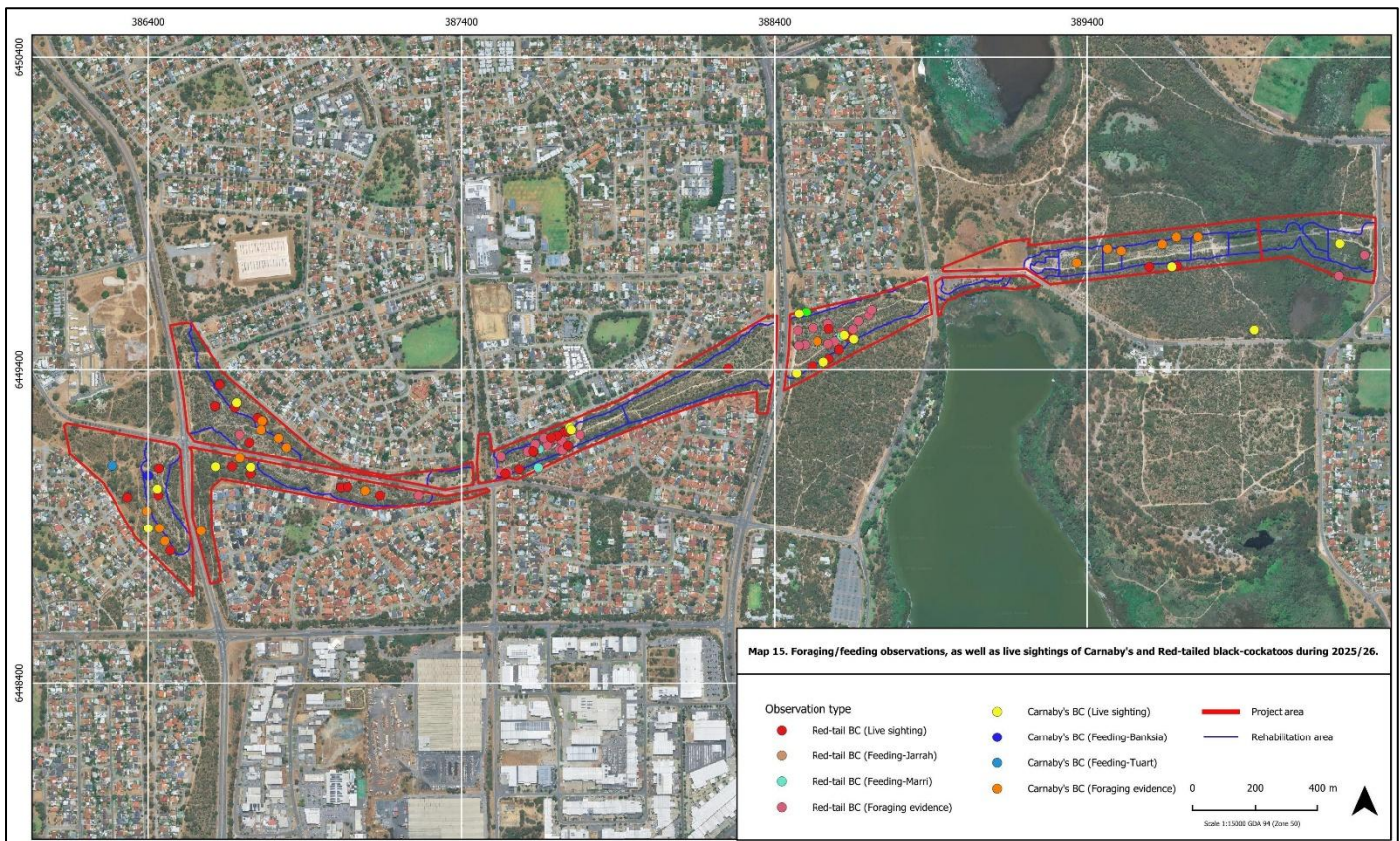


Figure 29. A small group of Forest red-tailed black cockatoos observed foraging on a resprouting/coppicing Marri within the rehabilitation area of Djara management zone. Note the amount of Marri nuts clearly visible in the photo (a); Foraging evidence (Marri nuts) of Forest red-tailed black cockatoos within the rehabilitation area in the Karak management zone (b); Foraging evidence (*Banksia* spikes) of Carnaby's cockatoo within reference area of the Biyara management zone.



4. Summary

The current survey was successful in detecting between 66-100% of the fauna previously recorded in the study area in baseline fauna surveys prior to clearing programs. Since clearing of the alignment, between 50-80% of these species have now been detected within rehabilitated areas, which achieves the minimum objective of Goal 10 in the RMP (frequency of records of native fauna species $\geq$ 50% of that recorded in the baseline survey and/or reference sites), and edges very close to the primary objective in the RMP (frequency of records of native fauna species $\geq$ 100% of that recorded in the baseline survey and/or reference sites).

Although species diversity was generally higher in reference areas, there has been some considerable recolonisation of several species since earlier surveys in 2019. Significant species such as Quenda have appeared to increase in abundance throughout the study area, although still in much higher abundances in the reference sites, foraging signs were more numerous, and Quenda were more widespread throughout the study area compared to 2019 surveys. Results from camera trapping events also follow this trend, with Quenda detections higher in reference areas.

While foraging evidence (and feeding observations) have also showed a significant increase in use of rehabilitated areas by both black cockatoo species.

Although there wasn't a significant effect of disturbance on ground-dwelling fauna observed during the current surveys, the vertebrate fauna community has generally suffered extensively throughout the SCP, and fauna assemblages now seen in the local area may not be a true reflection of what may once occurred, with assemblages present consisting of species that are more robust and able to persist in disturbed landscapes, therefore recolonisation of rehabilitated areas may have (or is currently) occurring quicker than more susceptible species. Whereas avifauna appear to be more specialised and susceptible, with several species requiring habitat values that are currently only present within the reference areas (i.e. mature trees), therefore recolonisation may take a much longer.

Regarding avifauna, there were clear differences between those species that can recolonise the rehabilitation areas sooner than those that may take more time. This was most obvious for species such as the Splendid fairy-wren and White-browed scrub-wren, which are occurring in much higher abundances in the rehabilitation sites. In this case, the dense shrub cover in these areas (particularly in management zones such as Djara and Moodjar), as well as the woody meadow plantings in Yaakan, A. Peck pers. comm., is providing much more suitable habitat than the surrounding reference habitat which may lack dense shrub cover. Both these species were observed in substantially higher abundances in these areas compared to adjoining reference sites. Both these species were only recorded at one site (Bibool rehabilitation) in 2019 surveys (see BCE, 2020), but have now been detected throughout Djara, Moodjar and Bibool in relatively high numbers. This may also be occurring for other species such as Bearded dragons, which may also benefit from a denser shrub layer. Conversely, species such as the Grey shrike-thrush and Striated pardalote were absent in the rehabilitated areas. The Grey shrike-thrush was not detected during 2019 surveys (see BCE, 2020), but was also detected multiple times in Djara, Moodjar and Bibool, but only in reference areas. With species such as the Grey shrike-thrush (as well several other species including Striated pardalote, Western gerygone, Brushtail possum and Marbled gecko), as rehabilitation matures, these species may also eventually begin to recolonise these areas, it may just take a little longer.

5. Reference metrics

Several systematic survey/data collection methods were employed during the current survey which provide a set of standardised, comparable methods for surveying several fauna groups, enabling analysis of basic trends and patterns. These methods, along with analysis techniques used in the current survey could be used as suitable methods for future surveys.

The comparison of species diversity and mean abundances of ground-dwelling vertebrates, birds and larger vertebrates (including feral species) can be systematically surveyed through repeated and comparable methods using the following methods:

- Ground-dwelling fauna: Systematic pitfall trapping
- Avifauna: Systematic bird census, and
- Large vertebrates (including feral species): Motion cameras

Targeting of specific species such as Quenda can be done by surveying for foraging signs (diggings) along set transects, while continued assessment of vegetation plots provide a comparison to habitat structure and quality.

Several of these methods have now been undertaken across several survey periods (i.e. Phoenix, 2011; BCE, 2020; current survey) and can continue to be repeated as required to provide information on how the rehabilitation is progressing throughout the study area. These methods used for the detection of species are more than adequate to survey for species and detect changes over time. However, for future surveys, the addition of more survey sites will only strengthen data and provide more robust measures of changes between reference and rehabilitation areas.

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Appendices

APPENDIX 1. Fauna trapping sites and reference photograph

Site description	Image
Tuart Reference (TR) Pit 1 Habitat Banksia-Tuart woodland Location -32.08947 115.795395	
Tuart Reference (TR) Pit 10 Habitat Banksia-Tuart woodland Location -32.091198 115.796908	

Site description	Image
Tuart Rehabilitation (TC) Pit 1 Habitat Banksia-Tuart woodland Location -32.088353 115.796652	 A photograph of a woodland area with several trees and dense undergrowth. The ground is covered with dry, yellowish-brown grass and fallen leaves. The trees have green foliage, and the sky is visible in the background.
Tuart Rehabilitation (TC) Pit 10 Habitat Banksia-Tuart woodland Location -32.090188 115.796707	 A photograph of a woodland area with several trees and dense undergrowth. The ground is covered with dry, yellowish-brown grass and fallen leaves. The trees have green foliage, and the sky is visible in the background.

Site description	Image
Biyara Reference (BR) Pit 1 Habitat Banksia-Jarrah woodland Location -32.087508 115.800115	
Biyara Reference (BR) Pit 10 Habitat Banksia-Jarrah woodland Location -32.08641 115.798637	

Site description	Image
Biyara Rehabilitation (BC) Pit 1 Habitat Banksia-Jarrah woodland Location -32.088108 115.799615	
Biyara Rehabilitation (BC) Pit 10 Habitat Banksia-Jarrah woodland Location -32.08688 115.798248	

Site description	Image
Quenda Reference (QR) Pit 1 Habitat Banksia-Jarrah woodland Location -32.089205 115.800583	
Quenda Reference (QR) Pit 10 Habitat Banksia-Jarrah woodland Location -32.085592 115.819963	

Site description	Image
Quenda Rehabilitation (QC) Pit 1 Habitat Banksia-Jarrah woodland Location -32.089425 115.802687	
Quenda Rehabilitation (QC) Pit 10 Habitat Banksia-Jarrah woodland Location -32.089638 115.804705	

Site description	Image
Karak Reference (KR) Pit 1 Habitat Banksia-Woody pear woodland Location -32.0878 115.8105	
Karak Reference (KR) Pit 9 Habitat Banksia-Woody pear woodland Location -32.089003 115.808538	

Site description	Image
Karak Rehabilitation (KC) Pit 1 Habitat Banksia-woody pear woodland Location -32.088152 115.81033	
Karak Rehabilitation (KC) Pit 10 Habitat Banksia-Woody pear woodland Location -32.088778 115.808378	

Site description	Image
Djara Reference (DR) Pit 1 Habitat Banksia-Jarrah woodland Location -32.086287 115.818162	
Djara Reference (DR) Pit 10 Habitat Banksia-Jarrah woodland Location -32.085592 115.819963	

Site description	Image
Djara Rehabilitation (DC) Pit 1 Habitat Banksia-Jarrah woodland Location -32.085207 115.818837	
Djara Rehabilitation (DC) Pit 10 Habitat Banksia-Jarrah woodland Location -32.084618 115.820802 D	

Site description	Image
Moodjar Reference (MR) Pit 1 Habitat Banksia woodland Location -32.0833 115.83108	
Moodjar Reference (MR) Pit 10 Habitat Banksia woodland Location -32.082465 115.831338	

Site description	Image
Moodjar Rehabilitation (MC) Pit 1 Habitat Banksia woodland Location -32.0827 115.832003	 A photograph showing a dense thicket of Banksia woodland on a rocky, sloping terrain. The vegetation is a mix of green and yellowish-green shrubs. A thin, light-colored stick or pole is visible in the foreground, leaning against the ground. The sky is clear and blue.
Moodjar Rehabilitation (MC) Pit 10 Habitat Banksia woodland Location -32.08288 115.830023	 A photograph showing a dense thicket of Banksia woodland on a rocky, sloping terrain. The vegetation is a mix of green and yellowish-green shrubs. The ground is rocky and covered with dry, brownish vegetation. The sky is clear and blue.

Site description	Image
Bibool Reference (BbR) Pit 2 Habitat Wet forest-Woodland Location -32.083408 115.836497	
Bibool Reference (BbR) Pit 10 Habitat Wet forest-Woodland Location -32.082945 115.835743 Direction	

Site description	Image
Bibool Rehabilitation (BbC) Pit 1 Habitat Wet forest-Woodland Location -32.082992 115.83748	
Bibool Rehabilitation (BC) Pit 10 Habitat Wet forest-woodland Location -32.082607 115.835793 Direction	

APPENDIX 2. Quenda foraging transects and reference photograph

Site Description	Image
Tuart Reference (TR Start) Location -32.090648 115.796647	
Tuart Reference (TR End) Location -32.091015 115.796982	

Site Description	Image
Tuart Rehabilitation (TC Start) Location -32.089297 115.796517	
Tuart Rehabilitation (TC End) Location -32.089745 115.796475	

Site Description	Image
Biyara Reference (BR Start) Location -32.087107 115.799463	
Biyara Reference (BR End) Location -32.086838 115.799077	

Site Description	Image
Biyara Rehabilitation (BC Start) Location -32.08745 115.798842	
Biyara Rehabilitation (BC End) Location -32.087153 115.798428	

Site Description	Image
Quenda Reference (QR Start) Location -32.088967 115.799748	 A photograph of a natural landscape at the Quenda Reference (QR Start) site. The foreground is covered in dry, brownish ground with scattered leaves and twigs. Several large, clumped plants with green, needle-like leaves and dense, brown, fibrous roots are visible. A yellow measuring tape is placed vertically on the ground next to one of the plants. The background shows more dense vegetation and trees.
Quenda Reference (QR End) Location -32.089058 115.800288	 A photograph of a natural landscape at the Quenda Reference (QR End) site. The foreground is covered in dry, brownish ground with scattered leaves and twigs. Several large, clumped plants with green, needle-like leaves and dense, brown, fibrous roots are visible. A yellow measuring tape is placed vertically on the ground next to one of the plants. The background shows more dense vegetation and trees.

Site Description	Image
Quenda Rehabilitation (QC Start) Location -32.089623 115.803483	
Quenda Rehabilitation (QC End) Location -32.089492 115.802965	

Site Description	Image
Karak Reference (KR Start) Location -32.088063 115.809887	
Karak Reference (KR End) Location -32.087823 115.810355	

Site Description	Image
Karak Rehabilitation (KC Start) Location -32.088132 115.810407	 A photograph showing a dense forest of trees with green leaves. A yellow measuring tape is placed vertically on the ground in the center of the frame, extending from the bottom towards the middle. The ground is covered with dry leaves and twigs.
Karak Rehabilitation (KC End) Location -32.088237 115.809892	 A photograph showing a wooded area with trees and a yellow measuring tape on the ground. The ground is sandy and covered with dry leaves and twigs. The trees are mostly bare, with some green leaves visible on the branches.

Site Description	Image
Djara Reference (DR Start) Location -32.08602115.81908	
Djara Reference (DR End) Location -32.086158115.818568	

Site Description	Image
Djara Rehabilitation (DC Start) Location -32.085238 115.81916	
Djara Rehabilitation (DC End) Location -32.085413 115.818663	

Site Description	Image
Bibool Reference (BbR Start) Location -32.083008115.835783	
Bibool Reference (BbR End) Location -32.083455115.835853	

Site Description	Image
Bibool Rehabilitation (BbC Start) Location -32.08285 115.83682	
Bibool Rehabilitation (BbC End) Location -32.082867 115.836268	

APPENDIX 3. Vegetation plots and reference photograph

Faunal Habitat Description	Image
Tuart Reference Plot Roe46 Banksia-Tuart woodland	 A photograph of a Banksia-Tuart woodland. The scene features several trees with thick, dark, textured bark and dense, green, needle-like foliage. The ground is covered with dry, yellowish-brown grass and some low-lying green plants. The background shows more trees and a clear blue sky.
Tuart Rehabilitation Plot Roe13 Banksia-Tuart woodland	 A photograph of a Banksia-Tuart woodland. The scene shows a dense stand of trees with thick, dark, textured bark and lush green foliage. The ground is covered with dry, yellowish-brown grass and some low-lying green plants. The background shows more trees and a clear blue sky.

Faunal Habitat Description	Image
Biyara Reference Plot FVC55 Banksia-Jarrah woodland	
Biyara Rehabilitation Plot Roe55 Banksia-Tuart woodland	

Faunal Habitat Description	Image
Quenda Reference Plot FT01 Banksia-Tuart woodland	
Quenda Rehabilitation Plot Roe43 Banksia-Tuart woodland	

Faunal Habitat Description	Image
Karak Reference Plot FT02 Banksia-Woody pear woodland	
Karak Rehabilitation Plot Roe38 Banksia-Woody pear woodland	

Faunal Habitat Description	Image
Djara Reference Plot Roe26 Banksia-Jarrah woodland	
Djara Rehabilitation Plot Roe21 Banksia-Jarrah woodland	

Faunal Habitat Description	Image
Moodjar Reference Plot FVC06 Banksia woodland	
Moodjar Rehabilitation Plot Roe06 Banksia woodland	

Faunal Habitat Description	Image
Bibool Reference Plot Roe53 Wet forest-Woodland	
Bibool Rehabilitation Plot Roe50 Wet forest-Woodland	

APPENDIX 4. Frog census locations and reference photograph

Location	Image
Yaakan (Bibra Lake) -32.084158 115.823472	
Moodjar (Horse Lake) -32.08277 115.824977	

Location	Image
Bibool (Roe Swamp) -32.082475 115.834935	

APPENDIX 5: Systematic trap site locations

Management zone	Location	Site/trap Number	Latitude	Longitude
Tuart	Reference	TR1	-32.08947	115.795395
Tuart	Reference	TR2	-32.089643	115.795478
Tuart	Reference	TR3	-32.089795	115.795642
Tuart	Reference	TR4	-32.090048	115.796093
Tuart	Reference	TR5	-32.090267	115.796185
Tuart	Reference	TR6	-32.090465	115.796193
Tuart	Reference	TR7	-32.090593	115.796405
Tuart	Reference	TR8	-32.090797	115.796515
Tuart	Reference	TR9	-32.09104	115.796677
Tuart	Reference	TR10	-32.091198	115.796908
Tuart	Rehabilitated	TC1	-32.088353	115.796652
Tuart	Rehabilitated	TC2	-32.08863	115.79655
Tuart	Rehabilitated	TC3	-32.088815	115.796555
Tuart	Rehabilitated	TC4	-32.089032	115.796537
Tuart	Rehabilitated	TC5	-32.089218	115.79648
Tuart	Rehabilitated	TC6	-32.089408	115.796493
Tuart	Rehabilitated	TC7	-32.089593	115.796522
Tuart	Rehabilitated	TC8	-32.0898	115.796532
Tuart	Rehabilitated	TC9	-32.089987	115.796625
Tuart	Rehabilitated	TC10	-32.090188	115.796707
Biyara	Reference	BR1	-32.087508	115.800115
Biyara	Reference	BR2	-32.087402	115.799903
Biyara	Reference	BR3	-32.08734	115.799682
Biyara	Reference	BR4	-32.08729	115.799473
Biyara	Reference	BR5	-32.087243	115.799258
Biyara	Reference	BR6	-32.087092	115.799138
Biyara	Reference	BR7	-32.086972	115.798962
Biyara	Reference	BR8	-32.086777	115.798862
Biyara	Reference	BR9	-32.086578	115.798777
Biyara	Reference	BR10	-32.08641	115.798637
Biyara	Rehabilitated	BC1	-32.088108	115.799615
Biyara	Rehabilitated	BC2	-32.087958	115.799477
Biyara	Rehabilitated	BC3	-32.08785	115.799288
Biyara	Rehabilitated	BC4	-32.087727	115.799138
Biyara	Rehabilitated	BC5	-32.08754	115.798987
Biyara	Rehabilitated	BC6	-32.087463	115.798757
Biyara	Rehabilitated	BC7	-32.08731	115.798657
Biyara	Rehabilitated	BC8	-32.0872	115.798468
Biyara	Rehabilitated	BC9	-32.087057	115.798335

Management zone	Location	Site/trap Number	Latitude	Longitude
Biyara	Rehabilitated	BC10	-32.08688	115.798248
Quenda	Reference	QR1	-32.089205	115.800583
Quenda	Reference	QR2	-32.08911	115.800402
Quenda	Reference	QR3	-32.089087	115.80017
Quenda	Reference	QR4	-32.089042	115.799922
Quenda	Reference	QR5	-32.088957	115.799732
Quenda	Reference	QR6	-32.088868	115.799495
Quenda	Reference	QR7	-32.088867	115.799263
Quenda	Reference	QR8	-32.088777	115.799023
Quenda	Reference	QR9	-32.088787	115.798695
Quenda	Reference	QR10	-32.088783	115.798467
Quenda	Rehabilitated	QC1	-32.089425	115.802687
Quenda	Rehabilitated	QC2	-32.089403	115.802925
Quenda	Rehabilitated	QC3	-32.089385	115.803158
Quenda	Rehabilitated	QC4	-32.089485	115.803377
Quenda	Rehabilitated	QC5	-32.089493	115.803602
Quenda	Rehabilitated	QC6	-32.089555	115.803828
Quenda	Rehabilitated	QC7	-32.089663	115.804037
Quenda	Rehabilitated	QC8	-32.089635	115.804257
Quenda	Rehabilitated	QC9	-32.089658	115.804478
Quenda	Rehabilitated	QC10	-32.089638	115.804705
Karak	Reference	KR1	-32.08784	115.810503
Karak	Reference	KR2	-32.087902	115.810265
Karak	Reference	KR3	-32.088008	115.810032
Karak	Reference	KR4	-32.088058	115.809825
Karak	Reference	KR5	-32.088295	115.810388
Karak	Reference	KR6	-32.088582	115.809655
Karak	Reference	KR7	-32.08869	115.809512
Karak	Reference	KR8	-32.088952	115.808733
Karak	Reference	KR9	-32.089003	115.808538
Karak	Reference	KR10	-32.089075	115.80826
Karak	Rehabilitated	KC1	-32.088152	115.81033
Karak	Rehabilitated	KC2	-32.088242	115.810112
Karak	Rehabilitated	KC3	-32.08825	115.80989
Karak	Rehabilitated	KC4	-32.088328	115.809682
Karak	Rehabilitated	KC5	-32.088403	115.809457
Karak	Rehabilitated	KC6	-32.088457	115.809233
Karak	Rehabilitated	KC7	-32.088532	115.80902
Karak	Rehabilitated	KC8	-32.088568	115.808802
Karak	Rehabilitated	KC9	-32.088678	115.808607

Management zone	Location	Site/trap Number	Latitude	Longitude
Karak	Rehabilitated	KC10	-32.088778	115.808378
Djara	Reference	DR1	-32.086287	115.818162
Djara	Reference	DR2	-32.086267	115.818402
Djara	Reference	DR3	-32.086145	115.818518
Djara	Reference	DR4	-32.086093	115.818697
Djara	Reference	DR5	-32.086055	115.818917
Djara	Reference	DR6	-32.085975	115.819087
Djara	Reference	DR7	-32.085885	115.819278
Djara	Reference	DR8	-32.085742	115.819435
Djara	Reference	DR9	-32.085632	115.819637
Djara	Reference	DR10	-32.085592	115.819963
Djara	Rehabilitated	DC1	-32.085207	115.818837
Djara	Rehabilitated	DC2	-32.085155	115.819078
Djara	Rehabilitated	DC3	-32.085023	115.819283
Djara	Rehabilitated	DC4	-32.084995	115.81955
Djara	Rehabilitated	DC5	-32.085063	115.819782
Djara	Rehabilitated	DC6	-32.084955	115.819982
Djara	Rehabilitated	DC7	-32.084855	115.820175
Djara	Rehabilitated	DC8	-32.084762	115.820367
Djara	Rehabilitated	DC9	-32.084675	115.82057
Djara	Rehabilitated	DC10	-32.084618	115.820802
Moodjar	Reference	MR1	-32.0833	115.83108
Moodjar	Reference	MR2	-32.08329	115.830875
Moodjar	Reference	MR3	-32.083293	115.83061
Moodjar	Reference	MR4	-32.083333	115.830377
Moodjar	Reference	MR5	-32.083318	115.830147
Moodjar	Reference	MR6	-32.082595	115.830298
Moodjar	Reference	MR7	-32.08258	115.83051
Moodjar	Reference	MR8	-32.082525	115.830842
Moodjar	Reference	MR9	-32.082467	115.831035
Moodjar	Reference	MR10	-32.082465	115.831338
Moodjar	Rehabilitated	MC1	-32.0827	115.832003
Moodjar	Rehabilitated	MC2	-32.082738	115.831785
Moodjar	Rehabilitated	MC3	-32.082765	115.831572
Moodjar	Rehabilitated	MC4	-32.082765	115.831323
Moodjar	Rehabilitated	MC5	-32.082772	115.8311
Moodjar	Rehabilitated	MC6	-32.082795	115.830877
Moodjar	Rehabilitated	MC7	-32.08283	115.830667
Moodjar	Rehabilitated	MC8	-32.082878	115.830445
Moodjar	Rehabilitated	MC9	-32.082865	115.830205

Management zone	Location	Site/trap Number	Latitude	Longitude
Moodjar	Rehabilitated	MC10	-32.08288	115.830023
Bibool	Reference	BbR1	-32.08332	115.836727
Bibool	Reference	BbR2	-32.083408	115.836497
Bibool	Reference	BbR3	-32.083407	115.836318
Bibool	Reference	BbR4	-32.083332	115.836123
Bibool	Reference	BbR5	-32.083332	115.836003
Bibool	Reference	BbR6	-32.083363	115.835828
Bibool	Reference	BbR7	-32.08337	115.835647
Bibool	Reference	BbR8	-32.083232	115.835735
Bibool	Reference	BbR9	-32.083083	115.835753
Bibool	Reference	BbR10	-32.082945	115.835743
Bibool	Rehabilitated	BbC1	-32.082992	115.83748
Bibool	Rehabilitated	BbC2	-32.082872	-32.082872
Bibool	Rehabilitated	BbC3	-32.082795	-32.082795
Bibool	Rehabilitated	BbC4	-32.08281	-32.08281
Bibool	Rehabilitated	BbC5	-32.082825	-32.082825
Bibool	Rehabilitated	BbC6	-32.082737	-32.082737
Bibool	Rehabilitated	BbC7	-32.082715	-32.082715
Bibool	Rehabilitated	BbC8	-32.082702	-32.082702
Bibool	Rehabilitated	BbC9	-32.082727	-32.082727
Bibool	Rehabilitated	BbC10	-32.082607	115.835793

APPENDIX 6. Bat detector locations

Management Zone	Latitude	Longitude	Phase 1		Phase 2	
			Date Deployed	Date Retrieved	Date Deployed	Date Retrieved
BIBOOL	-32.082473	115.835009	02-Nov-25	03-Nov-25	09-Feb-26	10-Feb-26
MOODJAR	-32.082847	115.830943	01-Nov-25	02-Nov-25	06-Feb-26	07-Feb-26
DJARA	-32.084919	115.81957	07-Nov-25	08-Nov-25	03-Feb-26	04-Feb-26
KARAK	-32.088545	115.808922	20-Nov-25	21-Nov-25	08-Feb-26	09-Feb-26
QUENDA	-32.08918	115.800907	03-Nov-25	04-Nov-25	07-Feb-26	08-Feb-26
BIYARA	-32.087463	115.798864	21-Nov-25	22-Nov-25	04-Feb-26	05-Feb-26
TUART	-32.089011	115.796283	06-Nov-25	07-Nov-25	05-Feb-26	06-Feb-26

Appendix 7. Additional vegetation assessment plot data undertaken during the 2025/2026 fauna surveys

Year	Management zone	Target ecosystem	Plot type	Plot number	Plot	Corner	Subplot	Microplot	Count	% Cover	Taxa	Leaf litter	Liter depth	Bare ground	Seedlings	Native	Weed	Herb
2025	Quenda	Banksia-Jarrah Woodland	Reference	FT01	20x20m	-	-	-	-	6	<i>Eucalyptus gomphocephala</i>							
2025	Quenda	Banksia-Jarrah Woodland	Reference	FT01	20x20m	-	-	-	-	15	<i>Eucalyptus marginata</i>							
2025	Quenda	Banksia-Jarrah Woodland	Reference	FT01	20x20m	-	-	-	-	8	<i>Banksia attenuata</i>							
2025	Quenda	Banksia-Jarrah Woodland	Reference	FT01	20x20m	-	-	-	-	15	<i>Banksia menziesii</i>							
2025	Quenda	Banksia-Jarrah Woodland	Reference	FT01	5x5m	SW	A	-	2	5	<i>Banksia menziesii</i>	75	1	25	1			
2025	Quenda	Banksia-Jarrah Woodland	Reference	FT01	5x5m	SW	A	-	2	5	<i>Xanthorrhoea preissii</i>							
2025	Quenda	Banksia-Jarrah Woodland	Reference	FT01	5x5m	SW	A	-	2	<1	<i>Gompholobium sp.</i>							
2025	Quenda	Banksia-Jarrah Woodland	Reference	FT01	5x5m	SW	A	-	1	<1	<i>Eucalyptus marginata</i>							
2025	Quenda	Banksia-Jarrah Woodland	Reference	FT01	5x5m	SW	A	-	1	<1	<i>Kennedia prostrata</i>							
2025	Quenda	Banksia-Jarrah Woodland	Reference	FT01	5x5m	SW	A	-	1	<1	<i>Banksia attenuata</i>							
2025	Quenda	Banksia-Jarrah Woodland	Reference	FT01	5x5m	NW	B	-	14	20	<i>Xanthorrhoea preissii</i>	95	1.5	5	<5			
2025	Quenda	Banksia-Jarrah Woodland	Reference	FT01	5x5m	NW	B	-	3	<1	<i>Styphelia pallida</i>							
2025	Quenda	Banksia-Jarrah Woodland	Reference	FT01	5x5m	NW	B	-	2	<1	<i>Hardenbergia comptoniana</i>							
2025	Quenda	Banksia-Jarrah Woodland	Reference	FT01	5x5m	NW	B	-	2	<1	<i>Gompholobium sp.</i>							
2025	Quenda	Banksia-Jarrah Woodland	Reference	FT01	5x5m	NW	B	-	4	2	<i>Banksia dallanneyi</i>							
2025	Quenda	Banksia-Jarrah Woodland	Reference	FT01	5x5m	NW	B	-	1	<1	<i>Hibbertia hypericoides</i>							
2025	Quenda	Banksia-Jarrah Woodland	Reference	FT01	5x5m	NE	C	-	3	10	<i>Banksia attenuata</i>	85	0.5	15	2			
2025	Quenda	Banksia-Jarrah Woodland	Reference	FT01	5x5m	NE	C	-	2	3	<i>Banksia menziesii</i>							
2025	Quenda	Banksia-Jarrah Woodland	Reference	FT01	5x5m	NE	C	-	3	5	<i>Xanthorrhoea preissii</i>							
2025	Quenda	Banksia-Jarrah Woodland	Reference	FT01	5x5m	NE	C	-	1	1	<i>Hibbertia hypericoides</i>							
2025	Quenda	Banksia-Jarrah Woodland	Reference	FT01	5x5m	NE	C	-	6	<1	<i>Gompholobium sp.</i>							
2025	Quenda	Banksia-Jarrah Woodland	Reference	FT01	5x5m	NE	C	-	1	<1	<i>Banksia dallanneyi</i>							
2025	Quenda	Banksia-Jarrah Woodland	Reference	FT01	5x5m	NE	C	-	1	<1	<i>Styphelia pallida</i>							
2025	Quenda	Banksia-Jarrah Woodland	Reference	FT01	5x5m	SE	D	-	3	3	<i>Banksia attenuata</i>	80	0.5	80	0			
2025	Quenda	Banksia-Jarrah Woodland	Reference	FT01	5x5m	SE	D	-	1	5	<i>Banksia menziesii</i>							
2025	Quenda	Banksia-Jarrah Woodland	Reference	FT01	5x5m	SE	D	-	10	10	<i>Xanthorrhoea preissii</i>							
2025	Quenda	Banksia-Jarrah Woodland	Reference	FT01	5x5m	SE	D	-	35	2	<i>Banksia dallanneyi</i>							
2025	Quenda	Banksia-Jarrah Woodland	Reference	FT01	5x5m	SE	D	-	3	<1	<i>Gompholobium sp.</i>							
2025	Quenda	Banksia-Jarrah Woodland	Reference	FT01	5x5m	SE	D	-	3	<1	<i>Styphelia pallida</i>							
2025	Quenda	Banksia-Jarrah Woodland	Reference	FT01	5x5m	SE	D	-	2	<1	<i>Hardenbergia comptoniana</i>							
2025	Quenda	Banksia-Jarrah Woodland	Reference	FT01	50x50cm	SW	-	-	-	-						0	12	11
2025	Quenda	Banksia-Jarrah Woodland	Reference	FT01	50x50cm	SW	-	-	-	-						0	7	3
2025	Quenda	Banksia-Jarrah Woodland	Reference	FT01	50x50cm	NW	-	-	-	-						0	15	0
2025	Quenda	Banksia-Jarrah Woodland	Reference	FT01	50x50cm	NW	-	-	-	-						0	22	0
2025	Quenda	Banksia-Jarrah Woodland	Reference	FT01	50x50cm	NE	-	-	-	-						0	11	4
2025	Quenda	Banksia-Jarrah Woodland	Reference	FT01	50x50cm	NE	-	-	-	-						0	30	11
2025	Quenda	Banksia-Jarrah Woodland	Reference	FT01	50x50cm	SE	-	-	-	-						0	2	2
2025	Quenda	Banksia-Jarrah Woodland	Reference	FT01	50x50cm	SE	-	-	-	-						0	6	5
2025	Karak	Banksia-Woody pear Woodland	Reference	FT02	20x20m	-	-	-	-	17	<i>Corymbia calophylla</i>							
2025	Karak	Banksia-Woody pear Woodland	Reference	FT02	20x20m	-	-	-	-	11	<i>Eucalyptus marginata</i>							
2025	Karak	Banksia-Woody pear Woodland	Reference	FT02	20x20m	-	-	-	-	20	<i>Xylomelum occidentale</i>							

Year	Management zone	Target ecosystem	Plot type	Plot number	Plot	Corner	Subplot	Microplot	Count	% Cover	Taxa	Leaf litter	Liter depth	Bare ground	Seedlings	Native	Weed	Herb
2025	Karak	Banksia-Woody pear Woodland	Reference	FT02	20x20m	-	-	-	-	4	<i>Banksia attenuata</i>							
2025	Karak	Banksia-Woody pear Woodland	Reference	FT02	5x5m	SW	A	-	5	5	<i>Xanthorrhoea preissii</i>	100	5	0	0			
2025	Karak	Banksia-Woody pear Woodland	Reference	FT02	5x5m	SW	A	-	12	20	<i>Hibbertia hypericoides</i>							
2025	Karak	Banksia-Woody pear Woodland	Reference	FT02	5x5m	SW	A	-	1	<1	<i>Hardenbergia comptoniana</i>							
2025	Karak	Banksia-Woody pear Woodland	Reference	FT02	5x5m	NW	B	-	2	20	<i>Eucalyptus marginata</i>	70	1	30	0			
2025	Karak	Banksia-Woody pear Woodland	Reference	FT02	5x5m	NW	B	-	3	25	<i>Xylomelum occidentale</i>							
2025	Karak	Banksia-Woody pear Woodland	Reference	FT02	5x5m	NW	B	-	2	2	<i>Xanthorrhoea preissii</i>							
2025	Karak	Banksia-Woody pear Woodland	Reference	FT02	5x5m	NW	B	-	1	<1	<i>Acacia pulchella</i>							
2025	Karak	Banksia-Woody pear Woodland	Reference	FT02	5x5m	NW	B	-	4	10	<i>Hibbertia hypericoides</i>							
2025	Karak	Banksia-Woody pear Woodland	Reference	FT02	5x5m	NW	B	-	1	<1	<i>Styphelia pallida</i>							
2025	Karak	Banksia-Woody pear Woodland	Reference	FT02	5x5m	NW	B	-	1	<1	<i>Hardenbergia comptoniana</i>							
2025	Karak	Banksia-Woody pear Woodland	Reference	FT02	5x5m	NW	B	-	1	<1	<i>Gompholobium sp.</i>							
2025	Karak	Banksia-Woody pear Woodland	Reference	FT02	5x5m	NE	C	-	1	6	<i>Corymbia calophylla</i>	100	5	0	2			
2025	Karak	Banksia-Woody pear Woodland	Reference	FT02	5x5m	NE	C	-	6	4	<i>Xylomelum occidentale</i>							
2025	Karak	Banksia-Woody pear Woodland	Reference	FT02	5x5m	NE	C	-	4	1	<i>Xanthorrhoea preissii</i>							
2025	Karak	Banksia-Woody pear Woodland	Reference	FT02	5x5m	NE	C	-	17	3	<i>Hibbertia hypericoides</i>							
2025	Karak	Banksia-Woody pear Woodland	Reference	FT02	5x5m	NE	C	-	2	<1	<i>Hardenbergia comptoniana</i>							
2025	Karak	Banksia-Woody pear Woodland	Reference	FT02	5x5m	SE	D	-	5	3	<i>Xanthorrhoea preissii</i>	100	2	0	0			
2025	Karak	Banksia-Woody pear Woodland	Reference	FT02	5x5m	SE	D	-	9	25	<i>Hibbertia hypericoides</i>							
2025	Karak	Banksia-Woody pear Woodland	Reference	FT02	5x5m	SE	D	-	1	<1	<i>Hardenbergia comptoniana</i>							
2025	Karak	Banksia-Woody pear Woodland	Reference	FT02	50x50cm	SW	-	-	-	-						0	13	<1
2025	Karak	Banksia-Woody pear Woodland	Reference	FT02	50x50cm	SW	-	-	-	-						0	11	0
2025	Karak	Banksia-Woody pear Woodland	Reference	FT02	50x50cm	NW	-	-	-	-						0	10	<1
2025	Karak	Banksia-Woody pear Woodland	Reference	FT02	50x50cm	NW	-	-	-	-						0	10	10
2025	Karak	Banksia-Woody pear Woodland	Reference	FT02	50x50cm	NE	-	-	-	-						0	9	0
2025	Karak	Banksia-Woody pear Woodland	Reference	FT02	50x50cm	NE	-	-	-	-						0	2	10
2025	Karak	Banksia-Woody pear Woodland	Reference	FT02	50x50cm	SE	-	-	-	-						0	17	0
2025	Karak	Banksia-Woody pear Woodland	Reference	FT02	50x50cm	SE	-	-	-	-						0	1	0

Appendix 8. Results of a seven-night motion camera survey along the Roe8 corridor during 2023 undertaken by FaunaTrack

Camera Number	Zone	Habitat	Date set	Lat	Long	Species detections						
						No captures	Cat	Bobtail	Maggie	Quenda	Black Rat	Rabbit
FA3	Karak (west)	Banksia/Woody Pear Woodland	11/19/2023	-32.087993	115.809973		x					
FA8	Karak (centre)	Banksia/Jarrah Woodland	11/19/2023	-32.087205	115.813547			x	x	x		
FC1	Karak (east)	Banksia/Jarrah Woodland	11/19/2023	-32.08576	115.81585		x	x		x		
FA9	Moodjar (west) outside fence	Banksia Woodland	11/19/2023	-32.082712	115.829528					x		
FB8	Quenda	Banksia/Jarrah Woodland	11/19/2023	-32.082747	115.835125	x						
FB9	Bibool (centre)	Wet Forest/Woodland	11/19/2023	-32.088625	115.796145		x					
FB10	Tuart	Banksia/Tuart Woodland	11/19/2023	-32.088958	115.799798	x						
FC7	Biyara	Banksia/Jarrah Woodland	11/19/2023	-32.087757	115.798887			x			x	
FD1	Moodjar (east) inside fence	Holly-leaved Banksia Woodland	11/19/2023	-32.082813	115.831698	x						
FD2	Bibool (east) inside fence	Banksia Coastal Blackbutt Woodland	11/19/2023	-32.083123	115.837503					x		x